**DOP 4 - 016 - 201280 - 2021/02**

Injection system EJOT MULTIFIX SE1000 SEISMIC for concrete (033)

## Inhaltsverzeichnis/ Table of contents — Seite/ Page

# Leistungserklärung

Nr.: **4 - 016 - 201280 - 2021/02** **DE**

1.) Eindeutiger Kenncode des Produkttyps:

**Injektionssystem EJOT MULTIFIX SE1000 SEISMIC für Beton (033)**

2.) Verwendungszweck:

**Verbunddübel zur Verankerung im Beton**

3.) Hersteller:

**EJOT Baubefestigungen GmbH, In der Stockwiese 35, 57334 Bad Laasphe - Germany**

4.) System zur Bewertung und Überprüfung der Leistungsbeständigkeit:

**System 1**

5.)

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| Europäisches Bewertungsdokument | **EAD 330499-01-0601** |
| Europäisch Technische Bewertung: | **ETA-20/1280** |
| Technische Bewertungsstelle: | **DIBt - Deutsches Institut für Bautechnik, Berlin** |
| Notifizierte Stelle: | **2873 - IFSW - Technische Universität Darmstadt** |

6.) Erklärte Leitung(en):

a) Mechanische Festigkeit und Standsicherheit (BWR 1) und Sicherheit bei der Nutzung (BWR 4)

| Wesentliche Merkmale | Leistungswerte |
|---|---|
| Charakteristischer Widerstand unter Zugbeanspruchung (statische und quasi-statische Einwirkungen) | Siehe Anhang B 3, C 1 bis C 5, C7 bis C 9, C 11 bis C 13 |
| Charakteristischer Widerstand unter Querbeanspruchung (statische und quasi-statische Einwirkungen) | Siehe Anhang C 1, C 6, C 10, C 14 |
| Verschiebungen unter Kurzzeit- und Langzeitbeanspruchung | Siehe Anhang C 15 bis C 17 |
| Charakteristischer Widerstand und Verschiebungen für seismische Leitungskategorien C1 und C2 | Siehe Anhang C 18 bis C 21 |
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# Leistungserklärung

Nr.: **4 - 016 - 201280 - 2021/02** **DE**

EJOT®

b) Brandschutz (BWR 2)

| Wesentliche Merkmale | Leistungswerte |
|---|---|
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c) Hygiene, Gesundheit und Umweltschutz (BWR 3)

| Wesentliche Merkmale | Leistungswerte |
|---|---|
| Inhalt, Emission und/oder Freisetzung von gefährlichen Stoffen | Keine Leistung bewertet |

d) Schallschutz (BWR 5)

| Wesentliche Merkmale | Leistungswerte |
|---|---|
| | |

e) Energieeinsparung und Wärmeschutz (BWR 6)

| Wesentliche Merkmale | Leistungswerte |
|---|---|
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f) Nachhaltige Nutzung der natürlichen Ressourcen (BWR 7)

| Wesentliche Merkmale | Leistungswerte |
|---|---|
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Die Leistung des vorstehenden Produkts entspricht der erklärten Leitung/den erklärten Leistungen. Für die Erstellung der Leistungserklärung im Einklang mit der Verordnung (EU) Nr. 305/2011 ist allein der oben genannte Hersteller verantwortlich.

Unterzeichnet für den Hersteller und im Namen des Herstellers von:

**Dr. Jens Weber**
(Name)

**Bad Laasphe, 09 March 2021**
(Ort und Datum der Ausstellung)

(Unterschrift)

# Declaration of Performance

No **4 - 016 - 201280 - 2021/02** **EN**

1.) Unique identification code of the product-type:

**Injection system EJOT MULTIFIX SE1000 SEISMIC for concrete (033)**

2.) Intended use:

**Bonded fastener for use in concrete**

3.) Manufacturer:

**EJOT Baubefestigungen GmbH, In der Stockwiese 35, 57334 Bad Laasphe - Germany**

4.) System of AVCP:

**System 1**

5.)

| | |
|---|---|
| European Assesment Document: | **EAD 330499-01-0601** |
| European Technical Assessment: | **ETA-20/1280** |
| Technical assessment body: | **DIBt - Deutsches Institut für Bautechnik, Berlin** |
| Notified body: | **2873 - IFSW - Technische Universität Darmstadt** |

6.) Declared Performance:

a) Mechanical resistance and stability (BWR 1) and safety and accessibility (BWR 4)

| Essential characteristic | Performance |
|---|---|
| Characteristic resistance to tension load (static and quasi-static loading) | See Annex B 3, C 1 to C 5, C7 to C 9, C 11 to C 13 |
| Characteristic resistance to shear load (static and quasi-static loading) | See Annex C 1, C 6, C 10, C 14 |
| Displacements under short-term and long-term loading | See Annex C 15 to C 17 |
| Characteristic resistance and displacements for seismic performance categories C1 and C2 | See Annex C 18 to C 21 |
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# Declaration of Performance

No **4 - 016 - 201280 - 2021/02** **EN**

EJOT®

b) Safety in case of fire (BWR 2)

| Essential characteristic | Performance |
|---|---|
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c) Hygiene, health and the environment (BWR 3)

| Essential characteristic | Performance |
|---|---|
| Content, emission and/or release of dangerous substances | No performance assessed |

d) Protection against noise (BWR 5)

| Essential characteristic | Performance |
|---|---|
| | |

e) Energy economy and heat retention (BWR 6)

| Essential characteristic | Performance |
|---|---|
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| | |
| | |

f) Sustainable use of natural resources (BWR 7)

| Essential characteristic | Performance |
|---|---|
| | |

The performance of the product identified above is in conformity with the set of declared performance/s. This declaration of performance is issued, in accordance with Regulation (EU) No 305/2011, under the sole responsibility of the manufacturer identified above.

Signed for and on behalf of the manufacturer by:

**Dr. Jens Weber**
(Name)

**Bad Laasphe, 09 March 2021**
(Place and date of issue)

(Signature)

# ДЕКЛАРАЦИЯ ЗА ЕКСПЛОАТАЦИОННИ ПОКАЗАТЕЛИ

№ **4 - 016 - 201280 - 2021/02** **BG**

1.) Уникален идентификационен код на типа продукт:

**Injection system EJOT MULTIFIX SE1000 SEISMIC for concrete (033)**

2.) Предвидена употреба/употреби:

**Залепен крепежен елемент за използване в бетон**

3.) Производител:

**EJOT Baubefestigungen GmbH, In der Stockwiese 35, 57334 Bad Laasphe - Germany**

4.) Система/системи за оценяване и проверка на постоянството на експлоатационните показатели:

**Сиситема 1**

5.)

| | |
|---|---|
| Европейски документ за оценяване: | **EAD 330499-01-0601** |
| Европейска техническа оценка: | **ETA-20/1280** |
| Орган за техническа оценка: | **DIBt - Deutsches Institut für Bautechnik, Berlin** |
| Нотифициран орган/органи: | **2873 - IFSW - Technische Universität Darmstadt** |

6.) Декларирани експлоатационни показатели:

a) Механична устойчивост и стабилност (BWR 1) и безопасност и достъпност (BWR 4)

| Основни характеристики | Показатели |
|---|---|
| Характерна устойчивост на натоварване на опън (статично и квазистатично натоварване) | Вж. приложение Б 3, C 1 до C 5, C7 до C 9, C 11 до C 13 |
| Характерна устойчивост на натоварване на срязване (статично и квазистатично натоварване) | Вж. приложение C 1, C 6, C 10, C 14 |
| Премествания при краткосрочно и дългосрочно натоварване | Вж. приложение C 15 до C 17 |
| Характерно съпротивление и премествания за категориите сеизмични характеристики C1 и C2 | Вж. приложение C 18 до C 21 |
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# ДЕКЛАРАЦИЯ ЗА ЕКСПЛОАТАЦИОННИ ПОКАЗАТЕЛИ

№ **4 - 016 - 201280 - 2021/02** **BG**

EJOT®

b) Безопасност в случай на пожар (BWR 2)

| Основни характеристики | Показатели |
|---|---|
| | |
| | |
| | |

c) Хигиена, здраве и околна среда (BWR 3)

| Основни характеристики | Показатели |
|---|---|
| Съдържание, емисии и/или изпускане на опасни вещества | Няма оценка на изпълнението |

d) Защита от шум (BWR 5)

| Основни характеристики | Показатели |
|---|---|
| | |

e) Икономия на енергия и запазване на топлината (BWR 6)

| Основни характеристики | Показатели |
|---|---|
| | |
| | |
| | |

f) Устойчиво използване на природните ресурси (BWR 7)

| Основни характеристики | Показатели |
|---|---|
| | |

Експлоатационните показатели на продукта, посочени по-горе, са в съответствие с декларираните експлоатационни показатели. Настоящата декларация за експлоатационни показатели се издава в съответствие с Регламент (ЕС) № 305/2011, като отговорността за нея се носи изцяло от посочения по-горе производител.

Подписано за и от името на производителя от:

**Dr. Jens Weber**
(Име)

**Bad Laasphe, 09 March 2021**
(Място и Дата)

(Подпис)

# PROHLÁŠENÍ O VLASTNOSTECH

č. **4 - 016 - 201280 - 2021/02** **CZ**

1.) Jedinečný identifikační kód typu výrobku:

**Injection system EJOT MULTIFIX SE1000 SEISMIC for concrete (033)**

2.) Zamýšlené/zamýšlená použití:

**Lepený spojovací prvek pro použití v betonu**

3.) Výrobce:

**EJOT Baubefestigungen GmbH, In der Stockwiese 35, 57334 Bad Laasphe - Germany**

4.) Systém/systémy POSV:

**Systém 1**

5.)

| | |
|---|---|
| Evropský dokument pro posuzování: | **EAD 330499-01-0601** |
| Evropské technické posouzení: | **ETA-20/1280** |
| Subjekt pro technické posuzování: | **DIBt - Deutsches Institut für Bautechnik, Berlin** |
| Oznámený subjekt/oznámené subjekty: | **2873 - IFSW - Technische Universität Darmstadt** |

6.) Deklarovaná vlastnost/Deklarované vlastnosti:

a) Mechanická odolnost a stabilita (BWR 1) a bezpečnost a dostupnost (BWR 4)

| základní charakteristiky | vlastnosti výrobku |
|---|---|
| Charakteristická odolnost proti zatížení tahem (statické a kvazistatické zatížení) | Viz příloha B 3, C 1 až C 5, C7 až C 9, C 11 až C 13. |
| Charakteristická odolnost proti smykovému zatížení (statické a kvazistatické zatížení) | Viz příloha C 1, C 6, C 10, C 14. |
| Posuny při krátkodobém a dlouhodobém zatížení | Viz příloha C 15 až C 17 |
| Charakteristická odolnost a posuny pro kategorie seismické odolnosti C1 a C2 | Viz přílohy C 18 až C 21 |
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# PROHLÁŠENÍ O VLASTNOSTECH

č. **4 - 016 - 201280 - 2021/02** **CZ**

EJOT®

b) Bezpečnost při požáru (BWR 2)

| základní charakteristiky | vlastnosti výrobku |
|---|---|
| | |
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| | |

c) Hygiena, zdraví a životní prostředí (BWR 3)

| základní charakteristiky | vlastnosti výrobku |
|---|---|
| Obsah, emise a/nebo uvolňování nebezpečných látek | Žádný hodnocený výkon |

d) Ochrana proti hluku (BWR 5)

| základní charakteristiky | vlastnosti výrobku |
|---|---|
| | |

e) Úspora energie a zadržování tepla (BWR 6)

| základní charakteristiky | vlastnosti výrobku |
|---|---|
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f) Udržitelné využívání přírodních zdrojů (BWR 7)

| základní charakteristiky | vlastnosti výrobku |
|---|---|
| | |

Vlastnosti výše uvedeného výrobku jsou ve shodě se souborem deklarovaných vlastností. Toto prohlášení o vlastnostech se v souladu s nařízením (EU) č. 305/2011 vydává na výhradní odpovědnost výrobce uvedeného výše.

Podepsáno za výrobce a jeho jménem:

**Dr. Jens Weber**
(jméno)

**Bad Laasphe, 09 March 2021**
(místo a datum vydání)

(podpis)

# YDEEVNEDEKLARATION

Nr.: **4 - 016 - 201280 - 2021/02** **DK**

1.) Varetypens unikke identifikationskode:

**Injection system EJOT MULTIFIX SE1000 SEISMIC for concrete (033)**

2.) Tilsigtet anvendelse:

**Limet fastgørelseselement til brug i beton**

3.) Fabrikant:

**EJOT Baubefestigungen GmbH, In der Stockwiese 35, 57334 Bad Laasphe - Germany**

4.) System eller systemer til vurdering og kontrol af konstansen af ydeevnen:

**System 1**

5.)

| | |
|---|---|
| Europæisk vurderingsdokument: | **EAD 330499-01-0601** |
| Europæisk teknisk vurdering: | **ETA-20/1280** |
| Teknisk vurderingsorgan: | **DIBt - Deutsches Institut für Bautechnik, Berlin** |
| Notificeret organ/notificerede organer: | **2873 - IFSW - Technische Universität Darmstadt** |

6.) Deklareret ydeevne/deklarerede ydeevner:

a) Mekanisk modstand og stabilitet (BWR 1) og sikkerhed og tilgængelighed (BWR 4)

| Væsentlige egenskaber | Ydelse |
|---|---|
| Karakteristisk modstandsdygtighed over for trækbelastning (statisk og kvasistatisk belastning) | Se bilag B 3, C 1 til C 5, C7 til C 9, C 11 til C 13 |
| Karakteristisk modstandsdygtighed over for forskydningsbelastning (statisk og kvasistatisk belastning) | Se bilag C 1, C 6, C 10 og C 14 |
| forskydninger under kortvarig og langvarig belastning | Se bilag C 15 til C 17 |
| Karakteristisk modstand og forskydninger for de seismiske præstationskategorier C1 og C2 | Se bilag C 18 til C 21 |
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# YDEEVNEDEKLARATION

Nr.: **4 - 016 - 201280 - 2021/02** **DK**

EJOT®

b) Sikkerhed ved brand (BWR 2)

| Væsentlige egenskaber | Ydelse |
|---|---|
| | |
| | |
| | |

c) Hygiejne, sundhed og miljø (BWR 3)

| Væsentlige egenskaber | Ydelse |
|---|---|
| Indhold, emission og/eller frigivelse af farlige stoffer | Ingen ydeevne vurderet |

d) Beskyttelse mod støj (BWR 5)

| Væsentlige egenskaber | Ydelse |
|---|---|
| | |

e) Energibesparelser og varmebinding (BWR 6)

| Væsentlige egenskaber | Ydelse |
|---|---|
| | |
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| | |

f) Bæredygtig udnyttelse af naturressourcer (BWR 7)

| Væsentlige egenskaber | Ydelse |
|---|---|
| | |

Ydeevnen for den vare, der er anført ovenfor, er i overensstemmelse med den deklarerede ydeevne. Denne ydeevnedeklaration er udarbejdet i overensstemmelse med forordning (EU) nr. 305/2011 på eneansvar af den fabrikant, der er anført ovenfor.

Underskrevet for fabrikanten og på dennes vegne af:

**Dr. Jens Weber**
(navn)

**Bad Laasphe, 09 March 2021**
(sted og dato for udstedelse)

(underskrift)

# TOIMIVUSDEKLARATSIOON

nr **4 - 016 - 201280 - 2021/02** **EE**

1.) Tootetüübi kordumatu identifitseerimiskood:

**Injection system EJOT MULTIFIX SE1000 SEISMIC for concrete (033)**

2.) Kavandatud kasutusala(d):

**Liimitud kinnitusdetail betoonis kasutamiseks**

3.) Tootja:

**EJOT Baubefestigungen GmbH, In der Stockwiese 35, 57334 Bad Laasphe - Germany**

4.) Toimivuse püsivuse hindamise ja kontrolli süsteem:

**Süsteem 1**

5.)

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|---|---|
| Euroopa hindamisdokument: | **EAD 330499-01-0601** |
| Euroopa tehniline hinnang: | **ETA-20/1280** |
| Tehnilise hindamise asutus: | **DIBt - Deutsches Institut für Bautechnik, Berlin** |
| Teavitatud asutus(ed): | **2873 - IFSW - Technische Universität Darmstadt** |

6.) Deklareeritud toimivus:

a) Mehaaniline vastupidavus ja stabiilsus (BWR 1) ning ohutus ja juurdepääsetavus (BWR 4)

| Põhiomadused | Toimivus |
|---|---|
| iseloomulik vastupidavus pingekoormusele (staatiline ja kvaasistaatiline koormus) | Vt lisa B 3, C 1-C 5, C7-C 9, C 11-C 13. |
| iseloomulik vastupidavus nihkekoormusele (staatiline ja kvaasistaatiline koormus) | Vt lisa C 1, C 6, C 10, C 14. |
| Nihked lühiajalise ja pikaajalise koormuse korral | Vt lisad C 15-C 17 |
| Seismilise vastupidavuse ja nihkete iseloomulikud väärtused C1- ja C2-kategooriate puhul | Vt lisad C 18-C 21 |
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# TOIMIVUSDEKLARATSIOON

nr **4 - 016 - 201280 - 2021/02** **EE**

EJOT®

b) Ohutus tulekahju korral (BWR 2)

| Põhiomadused | Toimivus |
|---|---|
| | |
| | |
| | |

c) Hügieen, tervis ja keskkond (BWR 3)

| Põhiomadused | Toimivus |
|---|---|
| Ohtlike ainete sisaldus, heide ja/või vabanemine | Tulemuslikkust ei ole hinnatud |

d) Kaitse müra eest (BWR 5)

| Põhiomadused | Toimivus |
|---|---|
| | |

e) Energiasääst ja soojapidavus (BWR 6)

| Põhiomadused | Toimivus |
|---|---|
| | |
| | |
| | |

f) Loodusvarade säästev kasutamine (BWR 7)

| Põhiomadused | Toimivus |
|---|---|
| | |

Eespool kirjeldatud toote toimivus vastab deklareeritud toimivusele. Käesolev toimivusdeklaratsioon on välja antud kooskõlas määrusega (EL) nr 305/2011 eespool nimetatud tootja ainuvastutusel.

Tootja poolt ja nimel allkirjastanud:

**Dr. Jens Weber**
(Nimi)

**Bad Laasphe, 09 March 2021**
(Koht ja kuupäev)

(Allkiri)

# DECLARACIÓN DE PRESTACIONES

no **4 - 016 - 201280 - 2021/02** **ES**

1.) Código de identificación única del producto tipo:

**Injection system EJOT MULTIFIX SE1000 SEISMIC for concrete (033)**

2.) Usos previstos:

**Fijación de enlace para su uso en hormigón**

3.) Fabricante:

**EJOT Baubefestigungen GmbH, In der Stockwiese 35, 57334 Bad Laasphe - Germany**

4.) Sistemas de evaluación y verificación de la constancia de las prestaciones (EVCP):

**Sistema 1**

5.)

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|---|---|
| Documento de evaluación europeo: | **EAD 330499-01-0601** |
| Evaluación técnica europea: | **ETA-20/1280** |
| Organismo de evaluación técnica: | **DIBt - Deutsches Institut für Bautechnik, Berlin** |
| Organismos notificados: | **2873 - IFSW - Technische Universität Darmstadt** |

6.) Prestaciones declaradas:

a) Resistencia mecánica y estabilidad (BWR 1) y seguridad y accesibilidad (BWR 4)

| Características esenciales | Prestaciones |
|---|---|
| Resistencia característica a la carga de tracción (carga estática y cuasiestática) | Véase el anexo B 3, C 1 a C 5, C 7 a C 9, C 11 a C 13 |
| Resistencia característica a la carga de cizallamiento (carga estática y cuasi-estática) | Véase el anexo C 1, C 6, C 10, C 14 |
| Desplazamientos bajo carga a corto y largo plazo | Véase el anexo C 15 a C 17 |
| Resistencia y desplazamientos característicos para las categorías de comportamiento sísmico C1 y C2 | Véase el anexo C 18 a C 21 |
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# DECLARACIÓN DE PRESTACIONES

no **4 - 016 - 201280 - 2021/02** **ES**

EJOT®

b) Seguridad en caso de incendio (BWR 2)

| Características esenciales | Prestaciones |
|---|---|
| | |
| | |
| | |

c) Higiene, salud y medio ambiente (BWR 3)

| Características esenciales | Prestaciones |
|---|---|
| Contenido, emisión y/o liberación de sustancias peligrosas | No se ha evaluado el rendimiento |

d) Protección contra el ruido (BWR 5)

| Características esenciales | Prestaciones |
|---|---|
| | |

e) Ahorro de energía y retención del calor (BWR 6)

| Características esenciales | Prestaciones |
|---|---|
| | |
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f) Uso sostenible de los recursos naturales (BWR 7)

| Características esenciales | Prestaciones |
|---|---|
| | |

Las prestaciones del producto identificado anteriormente son conformes con el conjunto de prestaciones declaradas. La presente declaración de prestaciones se emite, de conformidad con el Reglamento (UE) no 305/2011, bajo la sola responsabilidad del fabricante arriba identificado.

Firmado por y en nombre del fabricante por:

**Dr. Jens Weber**
(nombre)

**Bad Laasphe, 09 March 2021**
(lugar y fecha de emisión)

(firma)

# SUORITUSTASOILMOITUS

Nro **4 - 016 - 201280 - 2021/02** **FI**

1.) Tuotetyypin yksilöllinen tunniste:

**Injection system EJOT MULTIFIX SE1000 SEISMIC for concrete (033)**

2.) Aiottu käyttötarkoitus (aiotut käyttötarkoitukset):

**Liimattu kiinnitin käytettäväksi betonissa**

3.) Valmistaja:

**EJOT Baubefestigungen GmbH, In der Stockwiese 35, 57334 Bad Laasphe - Germany**

4.) Suoritustason pysyvyyden arvioinnissa ja varmentamisessa käytetty järjestelmä/käytetyt järjestelmät:

**Järjestelmä 1**

5.)

| | |
|---|---|
| Eurooppalainen arviointiasiakirja: | **EAD 330499-01-0601** |
| Eurooppalainen tekninen arviointi: | **ETA-20/1280** |
| Teknisestä arvioinnista vastaava laitos: | **DIBt - Deutsches Institut für Bautechnik, Berlin** |
| Ilmoitettu laitos/ilmoitetut laitokset: | **2873 - IFSW - Technische Universität Darmstadt** |

6.) Ilmoitettu suoritustaso/ilmoitetut suoritustasot:

a) Mekaaninen kestävyys ja vakavuus (BWR 1) sekä turvallisuus ja saavutettavuus (BWR 4)

| Perusominaisuudet | Tuotteen suoritustaso |
|---|---|
| Luonteenomainen vetokestävyys (staattinen ja kvasistaattinen kuormitus) | Ks. liite B 3, C 1-C 5, C7-C 9, C 11-C 13. |
| Leikkauskuormituksen ominaiskestävyys (staattinen ja kvasistaattinen kuormitus) | Ks. liite C 1, C 6, C 10, C 14. |
| Siirtymät lyhytaikaisessa ja pitkäaikaisessa kuormituksessa | Ks. liitteet C 15-C 17 |
| Seismisen lujuuden luokkien C1 ja C2 ominaisvastukset ja -siirtymät. | Ks. liitteet C 18-C 21 |
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# SUORITUSTASOILMOITUS

Nro **4 - 016 - 201280 - 2021/02** **FI**

EJOT®

b) Turvallisuus tulipalon sattuessa (BWR 2)

| Perusominaisuudet | Tuotteen suoritustaso |
|---|---|
| | |
| | |
| | |

c) Hygienia, terveys ja ympäristö (BWR 3)

| Perusominaisuudet | Tuotteen suoritustaso |
|---|---|
| Vaarallisten aineiden pitoisuus, päästöt ja/tai vapautuminen | Suorituskykyä ei ole arvioitu |

d) Suojaus melua vastaan (BWR 5)

| Perusominaisuudet | Tuotteen suoritustaso |
|---|---|
| | |

e) Energiansäästö ja lämmöntalteenotto (BWR 6)

| Perusominaisuudet | Tuotteen suoritustaso |
|---|---|
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f) Luonnonvarojen kestävä käyttö (BWR 7)

| Perusominaisuudet | Tuotteen suoritustaso |
|---|---|
| | |

Edellä yksilöidyn tuotteen suoritustaso on ilmoitettujen suoritustasojen joukon mukainen. Tämä suoritustasoilmoitus on asetuksen (EU) N:o 305/2011 mukaisesti annettu edellä ilmoitetun valmistajan yksinomaisella vastuulla.

Valmistajan puolesta allekirjoittanut:

**Dr. Jens Weber**
(nimi)

**Bad Laasphe, 09 March 2021**
(paikka ja päivämäärä)

(allekirjoitus)

# DÉCLARATION DES PERFORMANCES

No **4 - 016 - 201280 - 2021/02** **FR**

1.) Code d'identification unique du produit type:

**Injection system EJOT MULTIFIX SE1000 SEISMIC for concrete (033)**

2.) Usage(s) prévu(s):

**Attache collée pour utilisation dans le béton**

3.) Fabricant:

**EJOT Baubefestigungen GmbH, In der Stockwiese 35, 57334 Bad Laasphe - Germany**

4.) Système(s) d'évaluation et de vérification de la constance des performances:

**Système 1**

5.)

| | |
|---|---|
| Document d'évaluation européen: | **EAD 330499-01-0601** |
| Évaluation technique européenne: | **ETA-20/1280** |
| Organisme d'évaluation technique: | **DIBt - Deutsches Institut für Bautechnik, Berlin** |
| Organisme(s) notifié(s): | **2873 - IFSW - Technische Universität Darmstadt** |

6.) Performance(s) déclarée(s):

a) Résistance mécanique et stabilité (BWR 1) et sécurité et accessibilité (BWR 4)

| Caractéristiques essentielles | Performances du produit |
|---|---|
| Résistance caractéristique à la charge de tension (charge statique et quasi-statique) | Voir annexe B 3, C 1 à C 5, C7 à C 9, C 11 à C 13 |
| Résistance caractéristique à la charge de cisaillement (charge statique et quasi-statique) | Voir Annexe C 1, C 6, C 10, C 14 |
| Déplacements sous charge à court terme et à long terme | Voir annexe C 15 à C 17 |
| Résistance et déplacements caractéristiques pour les catégories de performance sismique C1 et C2 | Voir annexe C 18 à C 21 |
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# DÉCLARATION DES PERFORMANCES

No **4 - 016 - 201280 - 2021/02** **FR**

EJOT®

b) Sécurité en cas d'incendie (REB 2)

| Caractéristiques essentielles | Performances du produit |
|---|---|
| | |
| | |
| | |

c) Hygiène, santé et environnement (REB 3)

| Caractéristiques essentielles | Performances du produit |
|---|---|
| Contenu, émission et/ou rejet de substances dangereuses | Aucune performance évaluée |

d) Protection contre le bruit (REB 5)

| Caractéristiques essentielles | Performances du produit |
|---|---|
| | |

e) Économie d'énergie et rétention de la chaleur (REB 6)

| Caractéristiques essentielles | Performances du produit |
|---|---|
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f) Utilisation durable des ressources naturelles (REB 7)

| Caractéristiques essentielles | Performances du produit |
|---|---|
| | |

Les performances du produit identifié ci-dessus sont conformes aux performances déclarées. Conformément au règlement (UE) no 305/2011, la présente déclaration des performances est établie sous la seule responsabilité du fabricant mentionné ci-dessus.

Signé pour le fabricant et en son nom par:

**Dr. Jens Weber**
(Nom)

**Bad Laasphe, 09 March 2021**
(Lieu et date)

(Signature)

# ΔΗΛΩΣΗ ΕΠΙΔΟΣΕΩΝ

Αριθ. **4 - 016 - 201280 - 2021/02** **GR**

1.) Μοναδικός κωδικός ταυτοποίησης του τύπου του προϊόντος:

**Injection system EJOT MULTIFIX SE1000 SEISMIC for concrete (033)**

2.) Προβλεπόμενη(-ες) χρήση(-εις):

**Συγκολλημένος συνδετήρας για χρήση σε σκυρόδεμα**

3.) Κατασκευαστής:

**EJOT Baubefestigungen GmbH, In der Stockwiese 35, 57334 Bad Laasphe - Germany**

4.) Σύστημα/συστήματα AVCP (αξιολόγηση και επαλήθευση της σταθερότητας της επίδοσης):

**σύστημα 1**

5.)

| | |
|---|---|
| Ευρωπαϊκό έγγραφο αξιολόγησης: | **EAD 330499-01-0601** |
| Ευρωπαϊκή τεχνική αξιολόγηση: | **ETA-20/1280** |
| Οργανισμός τεχνικής αξιολόγησης: | **DIBt - Deutsches Institut für Bautechnik, Berlin** |
| Κοινοποιημένος(-οι) οργανισμός(-οι): | **2873 - IFSW - Technische Universität Darmstadt** |

6.) Δηλωθείσα(-ες) επίδοση(-εις):

a) Μηχανική αντίσταση και σταθερότητα (BWR 1) και ασφάλεια και προσβασιμότητα (BWR 4)

| Ουσιώδη χαρακτηριστικά | Απόδοση |
|---|---|
| Χαρακτηριστική αντοχή σε φορτίο εφελκυσμού (στατική και οιονεί στατική φόρτιση) | Βλέπε παράρτημα Β 3, Γ 1 έως Γ 5, Γ7 έως Γ 9, Γ 11 έως Γ 13 |
| Χαρακτηριστική αντοχή σε διατμητική φόρτιση (στατική και οιονεί στατική φόρτιση) | Βλέπε παράρτημα Γ 1, Γ 6, Γ 10, Γ 14 |
| Μετατοπίσεις υπό βραχυπρόθεσμη και μακροπρόθεσμη φόρτιση | Βλέπε παράρτημα Γ 15 έως Γ 17 |
| Χαρακτηριστική αντίσταση και μετατοπίσεις για τις κατηγορίες σεισμικής επιτελεστικότητας C1 και C2 | Βλέπε παράρτημα Γ 18 έως Γ 21 |
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# ΔΗΛΩΣΗ ΕΠΙΔΟΣΕΩΝ

Αριθ. **4 - 016 - 201280 - 2021/02** **GR**

b) Ασφάλεια σε περίπτωση πυρκαγιάς (BWR 2)

| Ουσιώδη χαρακτηριστικά | Απόδοση |
|---|---|
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c) Υγιεινή, υγεία και περιβάλλον (BWR 3)

| Ουσιώδη χαρακτηριστικά | Απόδοση |
|---|---|
| Περιεχόμενο, εκπομπή ή/και απελευθέρωση επικίνδυνων ουσιών | Δεν αξιολογούνται οι επιδόσεις |

d) Προστασία από θόρυβο (BWR 5)

| Ουσιώδη χαρακτηριστικά | Απόδοση |
|---|---|
| | |

e) Εξοικονόμηση ενέργειας και συγκράτηση θερμότητας (BWR 6)

| Ουσιώδη χαρακτηριστικά | Απόδοση |
|---|---|
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| | |

f) Εξοικονόμηση ενέργειας και συγκράτηση θερμότητας (BWR 7)

| Ουσιώδη χαρακτηριστικά | Απόδοση |
|---|---|
| | |

Η επίδοση του προϊόντος που ταυτοποιείται ανωτέρω είναι σύμφωνη με τη (τις) δηλωθείσα(-ες) επίδοση(-εις). Η δήλωση αυτή των επιδόσεων συντάσσεται, σύμφωνα με τον κανονισμό (ΕΕ) αριθ. 305/2011, με αποκλειστική ευθύνη του κατασκευαστή που ταυτοποιείται ανωτέρω.

Υπογραφή για λογαριασμό και εξ ονόματος του κατασκευαστή από:

**Dr. Jens Weber**
(όνομα)

**Bad Laasphe, 09 March 2021**
(τόπος και ημερομηνία έκδοσης)

(υπογραφή)

# IZJAVA O SVOJSTVIMA

Br. **4 - 016 - 201280 - 2021/02** **HR**

1.) Jedinstvena identifikacijska oznaka vrste proizvoda:

**Injection system EJOT MULTIFIX SE1000 SEISMIC for concrete (033)**

2.) Namjena/namjene:

**Vezani pričvrsni element za upotrebu u betonu**

3.) Proizvođač:

**EJOT Baubefestigungen GmbH, In der Stockwiese 35, 57334 Bad Laasphe - Germany**

4.) Sustav/sustavi za ocjenu i provjeru stalnosti svojstava (AVCP):

**Sustav 1**

5.)

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|---|---|
| Europski dokument za ocjenjivanje: | **EAD 330499-01-0601** |
| Europska tehnička ocjena: | **ETA-20/1280** |
| Tijelo za tehničko ocjenjivanje: | **DIBt - Deutsches Institut für Bautechnik, Berlin** |
| Prijavljeno tijelo/prijavljena tijela: | **2873 - IFSW - Technische Universität Darmstadt** |

6.) Objavljena svojstva:

a) Mehanička otpornost i stabilnost (BWR 1) i sigurnost i pristupačnost (BWR 4)

| Bitne karakteristike | Svojstva |
|---|---|
| Karakteristična otpornost na vlačno opterećenje (statičko i kvazistatičko opterećenje) | Vidi Dodatak B 3, C 1 do C 5, C7 do C 9, C 11 do C 13 |
| Karakteristična otpornost na posmično opterećenje (statičko i kvazistatičko opterećenje) | Vidi Prilog C 1, C 6, C 10, C 14 |
| Pomaci pod kratkoročnim i dugotrajnim opterećenjem | Vidi Dodatak C 15 do C 17 |
| Karakteristični otpor i pomaci za kategorije seizmičke izvedbe C1 i C2 | Vidi Dodatak C 18 do C 21 |
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# IZJAVA O SVOJSTVIMA

Br. **4 - 016 - 201280 - 2021/02** **HR**

EJOT®

b) Sigurnost u slučaju požara (BWR 2)

| Bitne karakteristike | Svojstva |
|---|---|
| | |
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| | |

c) Higijena, zdravlje i okoliš (BWR 3)

| Bitne karakteristike | Svojstva |
|---|---|
| Sadržaj, emisija i/ili ispuštanje opasnih tvari | Izvedba nije procijenjena |

d) Zaštita od buke (BWR 5)

| Bitne karakteristike | Svojstva |
|---|---|
| | |

e) Ušteda energije i zadržavanje topline (BWR 6)

| Bitne karakteristike | Svojstva |
|---|---|
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f) Održivo korištenje prirodnih resursa (BWR 7)

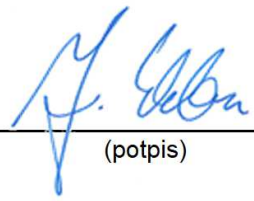
| Bitne karakteristike | Svojstva |
|---|---|
| | |

Prije utvrđeno svojstvo proizvoda u skladu je s objavljenim svojstvima. Ova izjava o svojstvima izdaje se, u skladu s Uredbom (EU) br. 305/2011, pod isključivom odgovornošću prethodno utvrđenog proizvođača.

Za proizvođača i u njegovo ime potpisao:

**Dr. Jens Weber**
(ime)

**Bad Laasphe, 09 March 2021**
(Mjesto i datum izdavanja)



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# TELJESÍTMÉNYNYILATKOZAT

Száma: **4 - 016 - 201280 - 2021/02** **HU**

1.) A terméktípus egyedi azonosító kódja:

**Injection system EJOT MULTIFIX SE1000 SEISMIC for concrete (033)**

2.) Felhasználás célja(i):

**Ragasztott kötőelem betonban való használatra**

3.) Gyártó:

**EJOT Baubefestigungen GmbH, In der Stockwiese 35, 57334 Bad Laasphe - Germany**

4.) Az AVCP-rendszer(ek):

**rendszer 1**

5.)

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|---|---|
| Az európai értékelési dokumentum: | **EAD 330499-01-0601** |
| Európai műszaki értékelés: | **ETA-20/1280** |
| A műszaki értékelést végző szerv: | **DIBt - Deutsches Institut für Bautechnik, Berlin** |
| Bejelentett szerv(ek): | **2873 - IFSW - Technische Universität Darmstadt** |

6.) A nyilatkozatban szereplő teljesítmény(ek):

a) Mechanikai ellenállás és stabilitás (BWR 1), biztonság és elérhetőség (BWR 4)

| Lényeges termékjellemzők | Termék teljesítménye |
|---|---|
| Jellemző ellenállás a húzóterheléssel szemben (statikus és kvázi-statikus terhelés) | Lásd a B. melléklet 3., C 1-5., C7-9., C 11-13. részét. |
| Jellemző nyíróterheléssel szembeni ellenállás (statikus és kvázi-statikus terhelés) | Lásd a C 1., C 6., C 10., C 14. mellékletet. |
| Rövid és hosszú távú terhelés alatti elmozdulások | Lásd a C 15-C 17. mellékletet |
| Jellemző ellenállás és elmozdulások a C1 és C2 szeizmikus teljesítménykategóriák esetében | Lásd a C 18-C 21. mellékletet |
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# TELJESÍTMÉNYNYILATKOZAT

Száma: **4 - 016 - 201280 - 2021/02** **HU**

EJOT®

b) Biztonság tűz esetén (BWR 2)

| Lényeges termékjellemzők | Termék teljesítménye |
|---|---|
| | |
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| | |

c) Higiénia, egészség és környezet (BWR 3)

| Lényeges termékjellemzők | Termék teljesítménye |
|---|---|
| Veszélyes anyagok tartalma, kibocsátása és/vagy kibocsátása | Nincs értékelt teljesítmény |

d) Zaj elleni védelem (BWR 5)

| Lényeges termékjellemzők | Termék teljesítménye |
|---|---|
| | |

e) Energiatakarékosság és hővisszatartás (BWR 6)

| Lényeges termékjellemzők | Termék teljesítménye |
|---|---|
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f) A természeti erőforrások fenntartható használata (BWR 7)

| Lényeges termékjellemzők | Termék teljesítménye |
|---|---|
| | |

A fent azonosított termék teljesítménye megfelel a bejelentett teljesítmény(ek)nek. A 305/2011/EU rendeletnek megfelelően e teljesítménynyilatkozat kiadásáért kizárólag a fent meghatározott gyártó a felelős.

A gyártó nevében és részéről aláíró személy:

**Dr. Jens Weber**
(név)

**Bad Laasphe, 09 March 2021**
(hely és kiállítás dátuma)

(aláírás)

# DICHIARAZIONE DI PRESTAZIONE

N. **4 - 016 - 201280 - 2021/02** **IT**

1.) Codice di identificazione unico del prodotto-tipo:

**Injection system EJOT MULTIFIX SE1000 SEISMIC for concrete (033)**

2.) Usi previsti:

**Fissaggio incollato per l'uso nel calcestruzzo**

3.) Fabbricante:

**EJOT Baubefestigungen GmbH, In der Stockwiese 35, 57334 Bad Laasphe - Germany**

4.) Sistemi di VVCP:

**Sistema 1**

5.)

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|---|---|
| Documento per la valutazione europea: | **EAD 330499-01-0601** |
| Valutazione tecnica europea: | **ETA-20/1280** |
| Organismo di valutazione tecnica: | **DIBt - Deutsches Institut für Bautechnik, Berlin** |
| Organismi notificati: | **2873 - IFSW - Technische Universität Darmstadt** |

6.) Prestazioni dichiarate:

a) Resistenza meccanica e stabilità (BWR 1) e sicurezza e accessibilità (BWR 4)

| Caratteristiche essenziali | Prestazione |
|---|---|
| Resistenza caratteristica al carico di trazione (carico statico e quasi statico) | Vedi allegato B 3, da C 1 a C 5, da C 7 a C 9, da C 11 a C 13 |
| Resistenza caratteristica al carico di taglio (carico statico e quasi-statico) | Vedi allegato C 1, C 6, C 10, C 14 |
| Spostamenti sotto carico a breve e lungo termine | Vedi allegato C 15 a C 17 |
| Resistenza e spostamenti caratteristici per le categorie di prestazione sismica C1 e C2 | Vedi allegato C 18 a C 21 |
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# DICHIARAZIONE DI PRESTAZIONE

N. **4 - 016 - 201280 - 2021/02** **IT**

EJOT®

b) Sicurezza in caso di incendio (BWR 2)

| Caratteristiche essenziali | Prestazione |
|---|---|
| | |
| | |
| | |

c) Igiene, salute e ambiente (BWR 3)

| Caratteristiche essenziali | Prestazione |
|---|---|
| Contenuto, emissione e/o rilascio di sostanze pericolose | Nessuna prestazione valutata |

d) Protezione contro il rumore (BWR 5)

| Caratteristiche essenziali | Prestazione |
|---|---|
| | |

e) Economia energetica e ritenzione di calore (BWR 6)

| Caratteristiche essenziali | Prestazione |
|---|---|
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f) Uso sostenibile delle risorse naturali (BWR 7)

| Caratteristiche essenziali | Prestazione |
|---|---|
| | |

La prestazione del prodotto sopra identificato è conforme all'insieme delle prestazioni dichiarate. La presente dichiarazione di responsabilità viene emessa, in conformità al regolamento (UE) n. 305/2011, sotto la sola responsabilità del fabbricante sopra identificato.

Firmato a nome e per conto del fabbricante da:

**Dr. Jens Weber**
(nome)

**Bad Laasphe, 09 March 2021**
(luogo e data del rilascio)

(firma)

# EKSPLOATACINIŲ SAVYBIŲ DEKLARACIJA

Nr. **4 - 016 - 201280 - 2021/02** **LT**

1.) Produkto tipo unikalus identifikavimo kodas:

**Injection system EJOT MULTIFIX SE1000 SEISMIC for concrete (033)**

2.) Naudojimo paskirtis (-ys):

**Klijuota tvirtinimo detalė, skirta naudoti betone**

3.) Gamintojas:

**EJOT Baubefestigungen GmbH, In der Stockwiese 35, 57334 Bad Laasphe - Germany**

4.) Eksploatacinių savybių pastovumo vertinimo ir tikrinimo sistema (-os):

**Sistema 1**

5.)

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|---|---|
| Europos vertinimo dokumentas: | **EAD 330499-01-0601** |
| Europos techninis įvertinimas: | **ETA-20/1280** |
| Techninio vertinimo įstaiga: | **DIBt - Deutsches Institut für Bautechnik, Berlin** |
| Notifikuotoji (-osios) įstaiga (-os): | **2873 - IFSW - Technische Universität Darmstadt** |

6.) Deklaruojama (-os) eksploatacinė (-ės) savybė (-ės):

a) Mechaninis atsparumas ir stabilumas (BWR 1) ir saugumas bei prieinamumas (BWR 4)

| Esminės charakteristikos | Eksploatacinės savybės |
|---|---|
| Charakteristinis atsparumas tempimo apkrovai (statinė ir kvazistatinė apkrova) | Žr. B 3 priedą, C 1-C 5, C7-C 9, C 11-C 13 |
| Charakteristinis atsparumas šlyties apkrovai (statinė ir kvazistatinė apkrova) | Žr. C 1, C 6, C 10, C 14 priedą. |
| Poslinkiai veikiant trumpalaikei ir ilgalaikei apkrovai | Žr. C 15-C 17 priedus. |
| Charakteristinis atsparumas ir poslinkiai C1 ir C2 seisminių charakteristikų kategorijoms | Žr. C 18-C 21 priedus. |
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# EKSPLOATACINIŲ SAVYBIŲ DEKLARACIJA

Nr. **4 - 016 - 201280 - 2021/02** **LT**

EJOT®

b) Sauga gaisro atveju (BWR 2)

| Esminės charakteristikos | Eksploatacinės savybės |
|---|---|
| | |
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| | |

c) Higiena, sveikata ir aplinka (BWR 3)

| Esminės charakteristikos | Eksploatacinės savybės |
|---|---|
| Pavojingų medžiagų kiekis, išmetimas ir (arba) išleidimas | Veiklos rezultatai neįvertinti |

d) Apsauga nuo triukšmo (BWR 5)

| Esminės charakteristikos | Eksploatacinės savybės |
|---|---|
| | |

e) Energijos taupymas ir šilumos išsaugojimas (BWR 6)

| Esminės charakteristikos | Eksploatacinės savybės |
|---|---|
| | |
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f) Tvarus gamtos išteklių naudojimas (BWR 7)

| Esminės charakteristikos | Eksploatacinės savybės |
|---|---|
| | |

Nurodyto produkto eksploatacinės savybės atitinka visas deklaruotas eksploatacines savybes. Ši eksploatacinių savybių deklaracija pateikiama vadovaujantis Reglamentu (ES) Nr. 305/2011, atsakomybė už jos turinį tenka tik joje nurodytam gamintojui.

Pasirašyta (gamintojo ir jo vardu):

**Dr. Jens Weber**
(vardas)

**Bad Laasphe, 09 March 2021**
(išdavimo vieta ir data)

(parašas)

# EKSPLUATĀCIJAS ĪPAŠĪBU DEKLARĀCIJA

Nr. **4 - 016 - 201280 - 2021/02** **LV**

1.) Unikālais izstrādājuma tipa identifikācijas numurs:

**Injection system EJOT MULTIFIX SE1000 SEISMIC for concrete (033)**

2.) Paredzētais izmantojums:

**Līmēts stiprinājums izmantošanai betonā**

3.) Ražotājs:

**EJOT Baubefestigungen GmbH, In der Stockwiese 35, 57334 Bad Laasphe - Germany**

4.) Ekspluatācijas īpašību noturības novērtējuma un pārbaudes (AVCP) sistēma(-as):

**Sistēma 1**

5.)

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|---|---|
| Eiropas novērtējuma dokuments: | **EAD 330499-01-0601** |
| Eiropas tehniskais novērtējums: | **ETA-20/1280** |
| Tehniskā novērtējuma iestāde: | **DIBt - Deutsches Institut für Bautechnik, Berlin** |
| Paziņotā(-ās) iestāde(-es): | **2873 - IFSW - Technische Universität Darmstadt** |

6.) Deklarētā(-ās) ekspluatācijas īpašība(-as):

a) Mehāniskā izturība un stabilitāte (BWR 1) un drošība un pieejamība (BWR 4)

| Būtiskie raksturlielumi | Ekspluatācijas īpašības |
|---|---|
| Raksturīgā izturība pret stiepes slodzi (statiskā un kvazi-statiskā slodze) | Skatīt B pielikumu 3, C 1 līdz C 5, C7 līdz C 9, C 11 līdz C 13. |
| Raksturīgā izturība pret bīdes slodzi (statiskā un kvazi-statiskā slodze) | Skatīt C 1., C 6., C 10., C 14. pielikumu. |
| pārvietojumi īslaicīgas un ilglaicīgas slodzes apstākļos | Skatīt C 15. līdz C 17. pielikumu. |
| Raksturīgā pretestība un pārvietojumi seismisko raksturlielumu kategorijām C1 un C2 | Skatīt C 18. līdz C 21. pielikumu. |
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# EKSPLUATĀCIJAS ĪPAŠĪBU DEKLARĀCIJA

Nr. **4 - 016 - 201280 - 2021/02** **LV**

EJOT®

b) Drošība ugunsgrēka gadījumā (BWR 2)

| Būtiskie raksturlielumi | Ekspluatācijas īpašības |
|---|---|
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c) Higiēna, veselība un vide (BWR 3)

| Būtiskie raksturlielumi | Ekspluatācijas īpašības |
|---|---|
| Bīstamu vielu saturs, emisija un/vai izdalīšanās | Veiktspēja nav novērtēta |

d) Aizsardzība pret troksni (BWR 5)

| Būtiskie raksturlielumi | Ekspluatācijas īpašības |
|---|---|
| | |

e) Enerģijas ekonomija un siltuma saglabāšana (BWR 6)

| Būtiskie raksturlielumi | Ekspluatācijas īpašības |
|---|---|
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f) Dabas resursu ilgtspējīga izmantošana (BWR 7)

| Būtiskie raksturlielumi | Ekspluatācijas īpašības |
|---|---|
| | |

Iepriekš norādītā izstrādājuma ekspluatācijas īpašības atbilst deklarēto ekspluatācijas īpašību kopumam. Šī ekspluatācijas īpašību deklarācija izdota saskaņā ar Regulu (ES) Nr. 305/2011, un par to ir atbildīgs vienīgi iepriekš norādītais ražotājs.

Parakstīts ražotāja vārdā:

**Dr. Jens Weber**
(Vārds)

**Bad Laasphe, 09 March 2021**
(Izsniegšanas vieta un datums)

(Paraksts)

# DIKJARAZZJONI TA' PRESTAZZJONI

Nru. **4 - 016 - 201280 - 2021/02** **MT**

1.) Kodiċi uniku ta' identifikazzjoni tat-tip tal-prodott:

**Injection system EJOT MULTIFIX SE1000 SEISMIC for concrete (033)**

2.) Użu/i intenzjonat/i:

**Qafliet magħqudin għall-użu fil-konkos**

3.) Manifattur:

**EJOT Baubefestigungen GmbH, In der Stockwiese 35, 57334 Bad Laasphe - Germany**

4.) Sistema/i ta' AVCP:

**Sistema 1**

5.)

| | |
|---|---|
| Dokument Ewropew ta' Valutazzjoni: | **EAD 330499-01-0601** |
| Valutazzjoni Teknika Ewropea: | **ETA-20/1280** |
| Korp tal-Valutazzjoni Teknika: | **DIBt - Deutsches Institut für Bautechnik, Berlin** |
| Korp/i nnotifikat/i: | **2873 - IFSW - Technische Universität Darmstadt** |

6.) Prestazzjoni/jiet ddikjarata/i:

a) Mehāniskā pretestība un stabilitāte (BPP 1) un drošība un pieejamība (BPP 4)

| Karatteristiċi essenzjali | Prestazzjoni |
|---|---|
| Reżistenza karatteristika għat-tagħbija tat-tensjoni (tagħbija statika u kważi-statika) | Ara l-Anness B 3, C 1 sa C 5, C7 sa C 9, C 11 sa C 13 |
| Reżistenza karatteristika għat-tagħbija shear (tagħbija statika u kważi-statika) | Ara l-Anness C 1, C 6, C 10, C 14 |
| Spostamenti taħt tagħbija għal żmien qasir u fit-tul | Ara l-Anness C 15 sa C 17 |
| Reżistenza karatteristika u spostamenti għall-kategoriji ta' prestazzjoni sismika C1 u C2 | Vidi Dodatak C 18 do C 21 |
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# DIKJARAZZJONI TA' PRESTAZZJONI

Nru. **4 - 016 - 201280 - 2021/02** **MT**

b) Sigurtà fil-każ ta 'nar (BWR 2)

| Karatteristiċi essenzjali | Prestazzjoni |
|---|---|
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c) Iġjene, saħħa u ambjent (BWR 3)

| Karatteristiċi essenzjali | Prestazzjoni |
|---|---|
| Kontenut, emissjoni u/jew rilaxx ta' sustanzi perikoluži | Ebda prestazzjoni evalwata |

d) Protezzjoni kontra l-istorbju (BWR 5)

| Karatteristiċi essenzjali | Prestazzjoni |
|---|---|
| | |

e) Ekonomija tal-enerġija u żamma tas-sħana (BWR 6)

| Karatteristiċi essenzjali | Prestazzjoni |
|---|---|
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f) Użu sostenibbli tar-riżorsi naturali (BWR 7)

| Karatteristiċi essenzjali | Prestazzjoni |
|---|---|
| | |

Il-prestazzjoni tal-prodott identifikat hawn fuq hija konformi mal-prestazzjonijiet iddikjarati. Din id-dikjarazzjoni ta' prestazzjoni hija maħruġa, skont ir-Regolament (UE) Nru 305/2011, taħt ir-responsabbiltà unika tal-manifattur identifikat hawn fuq.

Iffirmat għal u f'isem il-manifattur minn:

**Dr. Jens Weber**
(isem)

**Bad Laasphe, 09 March 2021**
(post u data tal-ħruġ)

(firma)

# PRESTATIEVERKLARING

Nr. **4 - 016 - 201280 - 2021/02** **NL**

1.) Unieke identificatiecode van het producttype:

**Injection system EJOT MULTIFIX SE1000 SEISMIC for concrete (033)**

2.) Beoogd(e) gebruik(en):

**Verlijmd bevestigingsmiddel voor gebruik in beton**

3.) Fabrikant:

**EJOT Baubefestigungen GmbH, In der Stockwiese 35, 57334 Bad Laasphe - Germany**

4.) Het systeem of de systemen voor de beoordeling en verificatie van de prestatiebestendigheid:

**Systeem 1**

5.)

| | |
|---|---|
| Europees beoordelingsdocument: | **EAD 330499-01-0601** |
| Europese technische beoordeling: | **ETA-20/1280** |
| Technische beoordelingsinstantie: | **DIBt - Deutsches Institut für Bautechnik, Berlin** |
| Aangemelde instantie(s): | **2873 - IFSW - Technische Universität Darmstadt** |

6.) Aangegeven prestatie(s):

a) Mehāniskā izturība un stabilitāte (BWR 1) un drošība un pieejamība (BWR 4)

| Essentiële kenmerken | Prestaties |
|---|---|
| Karakteristieke weerstand tegen trekbelasting (statische en quasi-statische belasting) | Zie bijlage B 3, C 1 tot en met C 5, C 7 tot en met C 9, C 11 tot en met C 13 |
| Karakteristieke weerstand tegen afschuifbelasting (statische en quasi-statische belasting) | Zie bijlage C 1, C 6, C 10, C 14 |
| Verplaatsingen onder korte- en langetermijnbelasting | Zie de bijlagen C 15 tot en met C 17 |
| Karakteristieke weerstand en verplaatsingen voor seismische prestatiecategorieën C1 en C2 | Zie de bijlagen C 18 tot en met C 21. |
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# PRESTATIEVERKLARING

Nr. **4 - 016 - 201280 - 2021/02** **NL**

EJOT®

b) Veiligheid in geval van brand (BWR 2)

| Essentiële kenmerken | Prestaties |
|---|---|
| | |
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| | |

c) Hygiëne, gezondheid en het milieu (BWR 3)

| Essentiële kenmerken | Prestaties |
|---|---|
| Inhoud, emissie en/of vrijkomen van gevaarlijke stoffen | Geen prestatiebeoordeling |

d) Bescherming tegen lawaai (BWR 5)

| Essentiële kenmerken | Prestaties |
|---|---|
| | |

e) Energiebesparing en warmtebehoud (BWR 6)

| Essentiële kenmerken | Prestaties |
|---|---|
| | |
| | |
| | |

f) Duurzaam gebruik van natuurlijke hulpbronnen (BWR 7)

| Essentiële kenmerken | Prestaties |
|---|---|
| | |

De prestaties van het hierboven omschreven product zijn conform de aangegeven prestaties. Deze prestatieverklaring wordt in overeenstemming met Verordening (EU) nr. 305/2011 onder de exclusieve verantwoordelijkheid van de hierboven vermelde fabrikant verstrekt.

Ondertekend voor en namens de fabrikant door:

**Dr. Jens Weber**
(naam)

**Bad Laasphe, 09 March 2021**
(plaats en datum van afgifte)

(handtekening)

# DEKLARACJA WŁAŚCIWOŚCI UŻYTKOWYCH

Nr **4 - 016 - 201280 - 2021/02** **PL**

1.) Niepowtarzalny kod identyfikacyjny typu wyrobu:

**Injection system EJOT MULTIFIX SE1000 SEISMIC for concrete (033)**

2.) Zamierzone zastosowanie lub zastosowania:

**Łącznik klejony do stosowania w betonie**

3.) Producent:

**EJOT Baubefestigungen GmbH, In der Stockwiese 35, 57334 Bad Laasphe - Germany**

4.) System(-y) oceny i weryfikacji stałości właściwości użytkowych:

**system 1**

5.)

| | |
|---|---|
| Europejski Dokument Oceny: | **EAD 330499-01-0601** |
| Europejska Ocena Techniczna: | **ETA-20/1280** |
| Jednostka ds. Oceny Technicznej: | **DIBt - Deutsches Institut für Bautechnik, Berlin** |
| Jednostka lub Jednostki Notyfikowane: | **2873 - IFSW - Technische Universität Darmstadt** |

6.) Deklarowane właściwości użytkowe:

a) Nośność i stateczność (BWR 1) oraz bezpieczeństwo użytkowania (BWR 4)

| Zasadnicze charakterystyki | Właściwości użytkowe |
|---|---|
| Charakterystyczna odporność na obciążenie rozciągające (obciążenie statyczne i quasi-statyczne) | Patrz Załącznik B 3, C 1 do C 5, C 7 do C 9, C 11 do C 13 |
| Charakterystyczna odporność na obciążenie ścinające (obciążenie statyczne i quasi-statyczne) | Patrz Załącznik C 1, C 6, C 10, C 14 |
| Przemieszczenia przy obciążeniu krótkotrwałym i długotrwałym | Patrz Załącznik C 15 do C 17 |
| Nośność charakterystyczna i przemieszczenia dla kategorii charakterystyki sejsmicznej C1 i C2 | Patrz Załącznik C 18 do C 21. |
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# DEKLARACJA WŁAŚCIWOŚCI UŻYTKOWYCH

Nr **4 - 016 - 201280 - 2021/02** **PL**

EJOT®

b) Bezpieczeństwo pożarowe (BWR 2)

| Zasadnicze charakterystyki | Właściwości użytkowe |
|---|---|
| | |
| | |
| | |

c) Higiena, zdrowie i środowisko (BWR 3)

| Zasadnicze charakterystyki | Właściwości użytkowe |
|---|---|
| Zawartość, emisja i/lub uwalnianie substancji niebezpiecznych | Brak oceny wyników |

d) Ochrona przed hałasem (BWR 5)

| Zasadnicze charakterystyki | Właściwości użytkowe |
|---|---|
| | |

e) Oszczędność energii i zatrzymywanie ciepła (BWR 6)

| Zasadnicze charakterystyki | Właściwości użytkowe |
|---|---|
| | |
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| | |

f) Zrównoważone wykorzystanie zasobów naturalnych (BWR 7)

| Zasadnicze charakterystyki | Właściwości użytkowe |
|---|---|
| | |

Właściwości użytkowe określonego powyżej wyrobu są zgodne z zestawem deklarowanych właściwości użytkowych. Niniejsza deklaracja właściwości użytkowych wydana zostaje zgodnie z Rozporządzeniem (UE) nr 305/2011 na wyłączną odpowiedzialność producenta określonego powyżej.

W imieniu producenta podpisał(-a):

**dr Jens Weber**
(nazwisko)

**Bad Laasphe, 09 March 2021**
(miejsce i data wydania)

(podpis)

# DECLARAÇÃO DE DESEMPENHO

N.o **4 - 016 - 201280 - 2021/02** **PT**

1.) Código de identificação único do produto-tipo:

**Injection system EJOT MULTIFIX SE1000 SEISMIC for concrete (033)**

2.) Utilização(ões) prevista(s)

**Fixador colado para utilização em betão**

3.) Fabricante:

**EJOT Baubefestigungen GmbH, In der Stockwiese 35, 57334 Bad Laasphe - Germany**

4.) Sistema(s) de avaliação e verificação da regularidade do desempenho (AVCP):

**Sistema 1**

5.)

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|---|---|
| Documento de Avaliação Europeu: | **EAD 330499-01-0601** |
| Avaliação Técnica Europeia | **ETA-20/1280** |
| Organismo de Avaliação Técnica: | **DIBt - Deutsches Institut für Bautechnik, Berlin** |
| Organismo(s) notificado (s): | **2873 - IFSW - Technische Universität Darmstadt** |

6.) Desempenho(s) declarado(s):

a) Resistência mecânica e estabilidade (BWR 1) e segurança e acessibilidade (BWR 4)

| Características essenciais | Desempenho |
|---|---|
| Resistência característica à carga de tensão (carga estática e quasi-estática) | Ver Anexo B 3, C 1 a C 5, C7 a C 9, C 11 a C 13 |
| Resistência característica à carga de corte (carga estática e quase-estática) | Ver Anexo C 1, C 6, C 10, C 14 |
| Deslocamentos sob carga a curto e longo prazo | Ver Anexo C 15 a C 17 |
| Resistência característica e deslocamentos para as categorias de desempenho sísmico C1 e C2 | Ver Anexo C 18 a C 21 |
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# DECLARAÇÃO DE DESEMPENHO

N.o **4 - 016 - 201280 - 2021/02** **PT**

EJOT®

b) Segurança em caso de incêndio (BWR 2)

| Características essenciais | Desempenho |
|---|---|
| | |
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| | |

c) Higiene, saúde e meio ambiente (BWR 3)

| Características essenciais | Desempenho |
|---|---|
| Conteúdo, emissão e/ou libertação de substâncias perigosas | Nenhum desempenho avaliado |

d) Protecção contra o ruído (BWR 5)

| Características essenciais | Desempenho |
|---|---|
| | |

e) Economia de energia e retenção de calor (BWR 6)

| Características essenciais | Desempenho |
|---|---|
| | |
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f) Utilização sustentável dos recursos naturais (BWR 7)

| Características essenciais | Desempenho |
|---|---|
| | |

O desempenho do produto identificado acima está em conformidade com o conjunto de desempenhos declarados. A presente declaração de desempenho é emitida, em conformidade com o Regulamento (UE) n.o 305/2011, sob a exclusiva responsabilidade do fabricante identificado acima.

Assinado por e em nome do fabricante por:

**Dr. Jens Weber**
(nome)

**Bad Laasphe, 09 March 2021**
(local e data de emissão)

(assinatura)

# DECLARAȚIA DE PERFORMANȚĂ

Nr, **4 - 016 - 201280 - 2021/02** **RO**

1.) Cod unic de identificare al produsului-tip:

**Injection system EJOT MULTIFIX SE1000 SEISMIC for concrete (033)**

2.) Utilizare (utilizări) preconizată (preconizate):

**Element de fixare lipit pentru utilizare în beton**

3.) Fabricant:

**EJOT Baubefestigungen GmbH, In der Stockwiese 35, 57334 Bad Laasphe - Germany**

4.) Sistemul (sistemele) de evaluare și de verificare a constanței performanței:

**Sistemul 1**

5.)

| | |
|---|---|
| Documentul de evaluare european: | **EAD 330499-01-0601** |
| Evaluarea tehnică europeană: | **ETA-20/1280** |
| Organismul de evaluare tehnică: | **DIBt - Deutsches Institut für Bautechnik, Berlin** |
| Organism (organisme) notificat(e): | **2873 - IFSW - Technische Universität Darmstadt** |

6.) Performanța (performanțe) declarată (declarate):

a) Rezistența mecanică și stabilitatea (BWR 1) și siguranța și accesibilitatea (BWR 4)

| Caracteristici esenţiale | Performanţa produsului |
|---|---|
| Rezistența caracteristică la sarcină de întindere (încărcare statică și cvasistatică) | A se vedea anexa B 3, de la C 1 la C 5, de la C7 la C 9, de la C 11 la C 13. |
| Rezistența caracteristică la sarcina de forfecare (încărcare statică și cvasistatică) | A se vedea anexa C 1, C 6, C 10, C 14. |
| Deplasări sub sarcină pe termen scurt și pe termen lung | A se vedea anexa C 15 - C 17 |
| Rezistența și deplasările caracteristice pentru categoriile de performanță seismică C1 și C2 | A se vedea anexa C 18 - C 21 |
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# DECLARAȚIA DE PERFORMANȚĂ

Nr, **4 - 016 - 201280 - 2021/02** **RO**

EJOT®

b) Siguranța în caz de incendiu (BWR 2)

| Caracteristici esenţiale | Performanţa produsului |
|---|---|
| | |
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| | |

c) Igiena, sănătatea și mediul (BWR 3)

| Caracteristici esenţiale | Performanţa produsului |
|---|---|
| Conținutul, emisia și/sau eliberarea de substanțe periculoase | Nu se evaluează performanța |

d) Protecție împotriva zgomotului (BWR 5)

| Caracteristici esenţiale | Performanţa produsului |
|---|---|
| | |

e) Economie de energie și păstrarea căldurii (BWR 6)

| Caracteristici esenţiale | Performanţa produsului |
|---|---|
| | |
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f) Utilizarea durabilă a resurselor naturale (BWR 7)

| Caracteristici esenţiale | Performanţa produsului |
|---|---|
| | |

Performanța produsului identificat mai sus este în conformitate cu setul de performanțe declarate. Această declarație de performanță este eliberată în conformitate cu Regulamentul (UE) nr. 305/2011, pe răspunderea exclusivă a fabricantului identificat mai sus.

Semnată pentru și în numele fabricantului de către:

**Dr. Jens Weber**
(numele)

**Bad Laasphe, 09 March 2021**
(locul şi data emiterii)

(semnătură)

# PRESTANDADEKLARATION

Nr **4 - 016 - 201280 - 2021/02** **SE**

1.) Produkttypens unika identifikationskod:

**Injection system EJOT MULTIFIX SE1000 SEISMIC for concrete (033)**

2.) Avsedd användning/avsedda användningar:

**Limmade fästelement för användning i betong**

3.) Tillverkare:

**EJOT Baubefestigungen GmbH, In der Stockwiese 35, 57334 Bad Laasphe - Germany**

4.) System för bedömning och fortlöpande kontroll av prestanda:

**Systen 1**

5.)

| | |
|---|---|
| Europeiskt bedömningsdokument: | **EAD 330499-01-0601** |
| Europeisk teknisk bedömning: | **ETA-20/1280** |
| Tekniskt bedömningsorgan: | **DIBt - Deutsches Institut für Bautechnik, Berlin** |
| Anmält/anmälda organ: | **2873 - IFSW - Technische Universität Darmstadt** |

6.) Angiven prestanda:

a) Mekanisk motstånd och stabilitet (BWR 1) och säkerhet och tillgänglighet (BWR 4)

| Väsentliga egenskaper | Prestanda |
|---|---|
| Karakteristisk motståndskraft mot spänningsbelastning (statisk och kvasistatisk belastning). | Se bilaga B 3, C 1 till C 5, C7 till C 9, C 11 till C 13. |
| Karakteristiskt motstånd mot skjuvbelastning (statisk och kvasistatisk belastning). | Se bilaga C 1, C 6, C 10, C 14. |
| Förskjutningar vid kortvarig och långvarig belastning | Se bilaga C 15 till C 17. |
| Karakteristiskt motstånd och förskjutningar för de seismiska prestandakategorierna C1 och C2. | Se bilaga C 18 till C 21. |
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# PRESTANDADEKLARATION

Nr **4 - 016 - 201280 - 2021/02** **SE**

EJOT®

b) Säkerhet vid brand (BWR 2)

| Väsentliga egenskaper | Prestanda |
|---|---|
| | |
| | |
| | |

c) Hygien, hälsa och miljö (BWR 3)

| Väsentliga egenskaper | Prestanda |
|---|---|
| Innehåll, utsläpp och/eller frigörelse av farliga ämnen | Ingen resultatbedömning |

d) Skydd mot buller (BWR 5)

| Väsentliga egenskaper | Prestanda |
|---|---|
| | |

e) Energihushållning och värmehållning (BWR 6)

| Väsentliga egenskaper | Prestanda |
|---|---|
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f) Hållbar användning av naturresurser (BWR 7)

| Väsentliga egenskaper | Prestanda |
|---|---|
| | |

Prestandan för ovanstående produkt överensstämmer med den angivna prestandan. Denna prestandadeklaration har utfärdats i enlighet med förordning (EU) nr 305/2011 på eget ansvar av den tillverkare som anges ovan.

Undertecknad på tillverkarens vägnar av:

**Dr. Jens Weber**
(namn)

**Bad Laasphe, 09 March 2021**
(Iplats and datum)


(signatur)

# VYHLÁSENIE O PARAMETROCH

č. **4 - 016 - 201280 - 2021/02** **SK**

1.) Jedinečný identifikačný kód typu výrobku:

**Injection system EJOT MULTIFIX SE1000 SEISMIC for concrete (033)**

2.) Zamýšľané použitie/použitia:

**Lepený spojovací prvok na použitie v betóne**

3.) Výrobca:

**EJOT Baubefestigungen GmbH, In der Stockwiese 35, 57334 Bad Laasphe - Germany**

4.) Systém(-y) posudzovania a overovania nemennosti parametrov:

**Systém 1**

5.)

| | |
|---|---|
| Európsky hodnotiaci dokument: | **EAD 330499-01-0601** |
| Európske technické posúdenie: | **ETA-20/1280** |
| Orgán technického posudzovania: | **DIBt - Deutsches Institut für Bautechnik, Berlin** |
| Notifikovaný(-é) subjekt(-y): | **2873 - IFSW - Technische Universität Darmstadt** |

6.) Deklarované parametre:

a) Mechanická odolnosť a stabilita (BWR 1) a bezpečnosť a dostupnosť (BWR 4)

| základné charakteristiky | vlastnosti výrobku |
|---|---|
| Charakteristická odolnosť voči ťahovému zaťaženiu (statické a kvázi-statické zaťaženie) | Pozri prílohu B 3, C 1 až C 5, C7 až C 9, C 11 až C 13 |
| Charakteristická odolnosť voči šmykovému zaťaženiu (statické a kvázi-statické zaťaženie) | Pozri prílohy C 1, C 6, C 10, C 14 |
| Posuny pri krátkodobom a dlhodobom zaťažení | Pozri prílohy C 15 až C 17 |
| Charakteristická odolnosť a posuny pre kategórie seizmickej odolnosti C1 a C2 | Pozri prílohy C 18 až C 21 |
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# VYHLÁSENIE O PARAMETROCH

č. **4 - 016 - 201280 - 2021/02** **SK**

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| b) Bezpečnosť v prípade požiaru (BWR 2) | |
|---|---|
| základné charakteristiky | vlastnosti výrobku |
| | |
| | |
| | |

| c) Hygiena, zdravie a životné prostredie (BWR 3) | |
|---|---|
| základné charakteristiky | vlastnosti výrobku |
| Obsah, emisie a/alebo uvoľňovanie nebezpečných látok | Nehodnotí sa žiadna výkonnosť |

| d) Ochrana proti hluku (BWR 5) | |
|---|---|
| základné charakteristiky | vlastnosti výrobku |
| | |

| e) Úspora energie a zadržiavanie tepla (BWR 6) | |
|---|---|
| základné charakteristiky | vlastnosti výrobku |
| | |
| | |
| | |

| f) Udržateľné využívanie prírodných zdrojov (BWR 7) | |
|---|---|
| základné charakteristiky | vlastnosti výrobku |
| | |

Uvedené parametre výrobku sú v zhode so súborom deklarovaných parametrov. Toto vyhlásenie o parametroch sa v súlade s nariadením (EÚ) č. 305/2011 vydáva na výhradnú zodpovednosť uvedeného výrobcu.

Podpísal(-a) za a v mene výrobcu:

**Dr. Jens Weber**
(meno)

**Bad Laasphe, 09 March 2021**
(miesto a dátum na výstava)

(podpis)

# IZJAVA O LASTNOSTIH

Št. **4 - 016 - 201280 - 2021/02** **SLO**

1.) Enotna identifikacijska oznaka tipa proizvoda:

**Injection system EJOT MULTIFIX SE1000 SEISMIC for concrete (033)**

2.) Predvidena uporaba:

**Lepljeni pritrdilni element za uporabo v betonu**

3.) Proizvajalec:

**EJOT Baubefestigungen GmbH, In der Stockwiese 35, 57334 Bad Laasphe - Germany**

4.) Sistemi ocenjevanja in preverjanja nespremenljivosti lastnosti:

**Sistem 1**

5.)

| | |
|---|---|
| Evropski ocenjevalni dokument: | **EAD 330499-01-0601** |
| Evropska tehnična ocena: | **ETA-20/1280** |
| Organ za tehnično ocenjevanje: | **DIBt - Deutsches Institut für Bautechnik, Berlin** |
| Priglašeni organi: | **2873 - IFSW - Technische Universität Darmstadt** |

6.) Navedene lastnosti:

a) Mehanska odpornost in stabilnost (BWR 1) ter varnost in dostopnost (BWR 4)

| Glavne značilnosti | Zmogljivost proizvoda |
|---|---|
| Značilna odpornost proti natezni obremenitvi (statična in kvazistatična obremenitev) | Glej Prilogo B 3, C 1 do C 5, C7 do C 9, C 11 do C 13 |
| Značilna odpornost na strižno obremenitev (statična in kvazistatična obremenitev) | Glej Prilogo C 1, C 6, C 10, C 14 |
| Premiki pri kratkotrajni in dolgotrajni obremenitvi | Glej Prilogo C 15 do C 17 |
| Značilna odpornost in pomiki za kategoriji potresne odpornosti C1 in C2 | Glej Prilogo C 18 do C 21. |
| | |
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# IZJAVA O LASTNOSTIH

Št. **4 - 016 - 201280 - 2021/02** **SLO**

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b) Varnost v primeru požara (BWR 2)

| Glavne značilnosti | Zmogljivost proizvoda |
|---|---|
| | |
| | |
| | |

c) Higiena, zdravje in okolje (BWR 3) \ t

| Glavne značilnosti | Zmogljivost proizvoda |
|---|---|
| Vsebnost, emisije in/ali sproščanje nevarnih snovi | Uspešnost ni bila ocenjena |

d) Zaščita pred hrupom (BWR 5) \ t

| Glavne značilnosti | Zmogljivost proizvoda |
|---|---|
| | |

e) Varčevanje z energijo in ohranjanje toplote (BWR 6) \ t

| Glavne značilnosti | Zmogljivost proizvoda |
|---|---|
| | |
| | |
| | |

f) Trajnostna raba naravnih virov (BWR 7) \ t

| Glavne značilnosti | Zmogljivost proizvoda |
|---|---|
| | |

Lastnosti proizvoda, navedenega zgoraj, so v skladu z navedenimi lastnostmi. Za izdajo te izjave o lastnostih je v skladu z Uredbo (EU) št. 305/2011 odgovoren izključno proizvajalec, naveden zgoraj.

Podpisal za in v imenu proizvajalca:

**Dr. Jens Weber**
(Ime)

**Bad Laasphe, 09 March 2021**
(Kraj in datum izstavitve)

(Podpis)

## Table B1: Installation parameters for threaded rod

| Anchor size | | | | M8 | M10 | M12 | M16 | M20 | M24 | M27 | M30 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Diameter of element | | $d = d_{nom}$ | [mm] | 8 | 10 | 12 | 16 | 20 | 24 | 27 | 30 |
| Nominal drill hole diameter | | $d_0$ | [mm] | 10 | 12 | 14 | 18 | 22 | 28 | 30 | 35 |
| Effective embedment depth | | $h_{ef,min}$ | [mm] | 60 | 60 | 70 | 80 | 90 | 96 | 108 | 120 |
| | | $h_{ef,max}$ | [mm] | 160 | 200 | 240 | 320 | 400 | 480 | 540 | 600 |
| Diameter of clearance hole in the fixture | Prepositioned installation | $d_f \leq$ | [mm] | 9 | 12 | 14 | 18 | 22 | 26 | 30 | 33 |
| | Push through installation | $d_f$ | [mm] | 12 | 14 | 16 | 20 | 24 | 30 | 33 | 40 |
| Maximum torque moment | | max $T_{inst} \leq$ | [Nm] | 10 | 20 | 40[1] | 60 | 100 | 170 | 250 | 300 |
| Minimum thickness of member | | $h_{min}$ | [mm] | $h_{ef}$ + 30 mm ≥ 100 mm | | | $h_{ef} + 2d_0$ | | | | |
| Minimum spacing | | $s_{min}$ | [mm] | 40 | 50 | 60 | 75 | 95 | 115 | 125 | 140 |
| Minimum edge distance | | $c_{min}$ | [mm] | 35 | 40 | 45 | 50 | 60 | 65 | 75 | 80 |

[1] Maximum Torque moment for M12 with steel Grade 4.6 is 35 Nm

## Table B2: Installation parameters for rebar

| Anchor size | | | Ø 8[1] | Ø 10[1] | Ø 12[1] | Ø 14 | Ø 16 | Ø 20 | Ø 24[1] | Ø 25[1] | Ø 28 | Ø 32 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Diameter of element | $d = d_{nom}$ | [mm] | 8 | 10 | 12 | 14 | 16 | 20 | 24 | 25 | 28 | 32 |
| Nominal drill hole diameter | $d_0$ | [mm] | 10 \| 12 | 12 \| 14 | 14 \| 16 | 18 | 20 | 25 | 30 \| 32 | 30 \| 32 | 35 | 40 |
| Effective embedment depth | $h_{ef,min}$ | [mm] | 60 | 60 | 70 | 75 | 80 | 90 | 96 | 100 | 112 | 128 |
| | $h_{ef,max}$ | [mm] | 160 | 200 | 240 | 280 | 320 | 400 | 480 | 500 | 560 | 640 |
| Minimum thickness of member | $h_{min}$ | [mm] | $h_{ef}$ + 30 mm ≥ 100 mm | | | $h_{ef} + 2d_0$ | | | | | | |
| Minimum spacing | $s_{min}$ | [mm] | 40 | 50 | 60 | 70 | 75 | 95 | 120 | 120 | 130 | 150 |
| Minimum edge distance | $c_{min}$ | [mm] | 35 | 40 | 45 | 50 | 50 | 60 | 70 | 70 | 75 | 85 |

[1] both nominal drill hole diameter can be used

## Table B3: Installation parameters for Internal threaded anchor rod

| Anchor size | | | IG-M6 | IG-M8 | IG-M10 | IG-M12 | IG-M16 | IG-M20 |
|---|---|---|---|---|---|---|---|---|
| Internal diameter of anchor rod | $d_2$ | [mm] | 6 | 8 | 10 | 12 | 16 | 20 |
| Outer diameter of anchor rod[1] | $d = d_{nom}$ | [mm] | 10 | 12 | 16 | 20 | 24 | 30 |
| Nominal drill hole diameter | $d_0$ | [mm] | 12 | 14 | 18 | 22 | 28 | 35 |
| Effective embedment depth | $h_{ef,min}$ | [mm] | 60 | 70 | 80 | 90 | 96 | 120 |
| | $h_{ef,max}$ | [mm] | 200 | 240 | 320 | 400 | 480 | 600 |
| Diameter of clearance hole in the fixture | $d_f \leq$ | [mm] | 7 | 9 | 12 | 14 | 18 | 22 |
| Maximum torque moment | max $T_{inst} \leq$ | [Nm] | 10 | 10 | 20 | 40 | 60 | 100 |
| Thread engagement length min/max | $l_{IG}$ | [mm] | 8/20 | 8/20 | 10/25 | 12/30 | 16/32 | 20/40 |
| Minimum thickness of member | $h_{min}$ | [mm] | $h_{ef}$ + 30 mm ≥ 100 mm | | $h_{ef} + 2d_0$ | | | |
| Minimum spacing | $s_{min}$ | [mm] | 50 | 60 | 75 | 95 | 115 | 140 |
| Minimum edge distance | $c_{min}$ | [mm] | 40 | 45 | 50 | 60 | 65 | 80 |

[1] With metric threads according to EN 1993-1-8:2005+AC:2009

**Injection system EJOT MULTIFIX SE1000 SEISMIC for concrete**

**Intended Use**
Installation parameters

**Annex B 3**

## Table C1: Characteristic values for steel tension resistance and steel shear resistance of threaded rods

| Size | | | | M8 | M10 | M12 | M16 | M20 | M24 | M27 | M30 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Cross section area | | $A_s$ | [mm²] | 36,6 | 58 | 84,3 | 157 | 245 | 353 | 459 | 561 |
| **Characteristic tension resistance, Steel failure** [1] | | | | | | | | | | | |
| Steel, Property class 4.6 and 4.8 | | $N_{Rk,s}$ | [kN] | 15 (13) | 23 (21) | 34 | 63 | 98 | 141 | 184 | 224 |
| Steel, Property class 5.6 and 5.8 | | $N_{Rk,s}$ | [kN] | 18 (17) | 29 (27) | 42 | 78 | 122 | 176 | 230 | 280 |
| Steel, Property class 8.8 | | $N_{Rk,s}$ | [kN] | 29 (27) | 46 (43) | 67 | 125 | 196 | 282 | 368 | 449 |
| Stainless steel A2, A4 and HCR, class 50 | | $N_{Rk,s}$ | [kN] | 18 | 29 | 42 | 79 | 123 | 177 | 230 | 281 |
| Stainless steel A2, A4 and HCR, class 70 | | $N_{Rk,s}$ | [kN] | 26 | 41 | 59 | 110 | 171 | 247 | -[3] | -[3] |
| Stainless steel A4 and HCR, class 80 | | $N_{Rk,s}$ | [kN] | 29 | 46 | 67 | 126 | 196 | 282 | -[3] | -[3] |
| **Characteristic tension resistance, Partial factor** [2] | | | | | | | | | | | |
| Steel, Property class 4.6 and 5.6 | | $\gamma_{Ms,N}$ | [-] | 2,0 | | | | | | | |
| Steel, Property class 4.8, 5.8 and 8.8 | | $\gamma_{Ms,N}$ | [-] | 1,5 | | | | | | | |
| Stainless steel A2, A4 and HCR, class 50 | | $\gamma_{Ms,N}$ | [-] | 2,86 | | | | | | | |
| Stainless steel A2, A4 and HCR, class 70 | | $\gamma_{Ms,N}$ | [-] | 1,87 | | | | | | | |
| Stainless steel A4 and HCR, class 80 | | $\gamma_{Ms,N}$ | [-] | 1,6 | | | | | | | |
| **Characteristic shear resistance, Steel failure** [1] | | | | | | | | | | | |
| Without lever arm | Steel, Property class 4.6 and 4.8 | $V^0_{Rk,s}$ | [kN] | 9 (8) | 14 (13) | 20 | 38 | 59 | 85 | 110 | 135 |
| | Steel, Property class 5.6 and 5.8 | $V^0_{Rk,s}$ | [kN] | 11 (10) | 17 (16) | 25 | 47 | 74 | 106 | 138 | 168 |
| | Steel, Property class 8.8 | $V^0_{Rk,s}$ | [kN] | 15 (13) | 23 (21) | 34 | 63 | 98 | 141 | 184 | 224 |
| | Stainless steel A2, A4 and HCR, class 50 | $V^0_{Rk,s}$ | [kN] | 9 | 15 | 21 | 39 | 61 | 88 | 115 | 140 |
| | Stainless steel A2, A4 and HCR, class 70 | $V^0_{Rk,s}$ | [kN] | 13 | 20 | 30 | 55 | 86 | 124 | -[3] | -[3] |
| | Stainless steel A4 and HCR, class 80 | $V^0_{Rk,s}$ | [kN] | 15 | 23 | 34 | 63 | 98 | 141 | -[3] | -[3] |
| With lever arm | Steel, Property class 4.6 and 4.8 | $M^0_{Rk,s}$ | [Nm] | 15 (13) | 30 (27) | 52 | 133 | 260 | 449 | 666 | 900 |
| | Steel, Property class 5.6 and 5.8 | $M^0_{Rk,s}$ | [Nm] | 19 (16) | 37 (33) | 65 | 166 | 324 | 560 | 833 | 1123 |
| | Steel, Property class 8.8 | $M^0_{Rk,s}$ | [Nm] | 30 (26) | 60 (53) | 105 | 266 | 519 | 896 | 1333 | 1797 |
| | Stainless steel A2, A4 and HCR, class 50 | $M^0_{Rk,s}$ | [Nm] | 19 | 37 | 66 | 167 | 325 | 561 | 832 | 1125 |
| | Stainless steel A2, A4 and HCR, class 70 | $M^0_{Rk,s}$ | [Nm] | 26 | 52 | 92 | 232 | 454 | 784 | -[3] | -[3] |
| | Stainless steel A4 and HCR, class 80 | $M^0_{Rk,s}$ | [Nm] | 30 | 59 | 105 | 266 | 519 | 896 | -[3] | -[3] |
| **Characteristic shear resistance, Partial factor** [2] | | | | | | | | | | | |
| Steel, Property class 4.6 and 5.6 | | $\gamma_{Ms,V}$ | [-] | 1,67 | | | | | | | |
| Steel, Property class 4.8, 5.8 and 8.8 | | $\gamma_{Ms,V}$ | [-] | 1,25 | | | | | | | |
| Stainless steel A2, A4 and HCR, class 50 | | $\gamma_{Ms,V}$ | [-] | 2,38 | | | | | | | |
| Stainless steel A2, A4 and HCR, class 70 | | $\gamma_{Ms,V}$ | [-] | 1,56 | | | | | | | |
| Stainless steel A4 and HCR, class 80 | | $\gamma_{Ms,V}$ | [-] | 1,33 | | | | | | | |

[1] Values are only valid for the given stress area $A_s$. Values in brackets are valid for undersized threaded rods with smaller stress area $A_s$ for hot-dip galvanised threaded rods according to EN ISO 10684:2004+AC:2009.
[2] in absence of national regulation
[3] Anchor type not part of the ETA

**Injection system EJOT MULTIFIX SE1000 SEISMIC for concrete**

**Performances**
Characteristic values for steel tension resistance and steel shear resistance of threaded rods

**Annex C 1**

**Table C2: Characteristic values for Concrete cone failure and Splitting with all kind of action**

| Anchor | | | | All Anchor type and sizes |
|---|---|---|---|---|
| **Concrete cone failure** | | | | |
| Non-cracked concrete | | $k_{ucr,N}$ | [-] | 11,0 |
| Cracked concrete | | $k_{cr,N}$ | [-] | 7,7 |
| Edge distance | | $c_{cr,N}$ | [mm] | 1,5 $h_{ef}$ |
| Axial distance | | $s_{cr,N}$ | [mm] | 2 $c_{cr,N}$ |
| **Splitting** | | | | |
| Edge distance | $h/h_{ef} \geq 2,0$ | $c_{cr,sp}$ | [mm] | 1,0 $h_{ef}$ |
| | $2,0 > h/h_{ef} > 1,3$ | | | $2 \cdot h_{ef} \left( 2,5 - \frac{h}{h_{ef}} \right)$ |
| | $h/h_{ef} \leq 1,3$ | | | 2,4 $h_{ef}$ |
| Axial distance | | $s_{cr,sp}$ | [mm] | 2 $c_{cr,sp}$ |

| | |
|---|---|
| **Injection system EJOT MULTIFIX SE1000 SEISMIC for concrete** | **Annex C 2** |
| **Performances**<br>Characteristic values for Concrete cone failure and Splitting with all kind of action | |

**Table C3: Characteristic values of tension loads under static and quasi-static action for a working life of 50 years**

| **Anchor size threaded rod** | | | | **M8** | **M10** | **M12** | **M16** | **M20** | **M24** | **M27** | **M30** |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Steel failure | | | | | | | | | | | |
| Characteristic tension resistance | | $N_{Rk,s}$ | [kN] | $A_s \cdot f_{uk}$ (or see Table C1) | | | | | | | |
| Partial factor | | $\gamma_{Ms,N}$ | [-] | see Table C1 | | | | | | | |
| **Combined pull-out and concrete failure** | | | | | | | | | | | |
| Characteristic bond resistance in non-cracked concrete C20/25 in hammer drilled holes (HD) and compressed air drilled holes (CD) | | | | | | | | | | | |
| Temperature range I: 40°C/24°C | Dry, wet concrete and flooded bore hole | $\tau_{Rk,ucr}$ | [N/mm²] | 20 | 20 | 19 | 19 | 18 | 17 | 16 | 16 |
| Temperature range II: 72°C/50°C | | | | 15 | 15 | 15 | 14 | 13 | 13 | 12 | 12 |
| Characteristic bond resistance in non-cracked concrete C20/25 in hammer drilled holes with hollow drill bit (HDB) | | | | | | | | | | | |
| Temperature range I: 40°C/24°C | Dry, wet concrete | $\tau_{Rk,ucr}$ | [N/mm²] | 17 | 16 | 16 | 16 | 15 | 14 | 14 | 13 |
| Temperature range II: 72°C/50°C | | | | 14 | 14 | 14 | 13 | 13 | 12 | 12 | 11 |
| Temperature range I: 40°C/24°C | flooded bore hole | | | 16 | 16 | 16 | 15 | 15 | 14 | 14 | 13 |
| Temperature range II: 72°C/50°C | | | | 14 | 14 | 14 | 13 | 13 | 12 | 12 | 11 |
| Characteristic bond resistance in cracked concrete C20/25 in hammer drilled holes (HD) , compressed air drilled holes (CD) and with hollow drill bit (HDB) | | | | | | | | | | | |
| Temperature range I: 40°C/24°C | Dry, wet concrete and flooded bore hole | $\tau_{Rk,cr}$ | [N/mm²] | 7,0 | 7,0 | 8,5 | 8,5 | 8,5 | 8,5 | 8,5 | 8,5 |
| Temperature range II: 72°C/50°C | | | | 6,0 | 6,0 | 7,0 | 7,0 | 7,0 | 7,0 | 7,0 | 7,0 |
| Reduction factor $\psi^0_{sus}$ in cracked and non-cracked concrete C20/25 in hammer drilled holes (HD), compressed air drilled holes (CD) and with hollow drill bit (HDB) | | | | | | | | | | | |
| Temperature range I: 40°C/24°C | Dry, wet concrete and flooded bore hole | $\psi^0_{sus}$ | [-] | 0,80 | | | | | | | |
| Temperature range II: 72°C/50°C | | | | 0,68 | | | | | | | |
| Increasing factors for concrete $\psi_c$ | | C25/30 | | 1,02 | | | | | | | |
| | | C30/37 | | 1,04 | | | | | | | |
| | | C35/45 | | 1,07 | | | | | | | |
| | | C40/50 | | 1,08 | | | | | | | |
| | | C45/55 | | 1,09 | | | | | | | |
| | | C50/60 | | 1,10 | | | | | | | |
| **Concrete cone failure** | | | | | | | | | | | |
| Relevant parameter | | | | see Table C2 | | | | | | | |
| **Splitting** | | | | | | | | | | | |
| Relevant parameter | | | | see Table C2 | | | | | | | |
| **Installation factor** | | | | | | | | | | | |
| for dry and wet concrete (HD; HDB, CD) | | $\gamma_{inst}$ | [-] | 1,0 | | | | | | | |
| for flooded bore hole (HD; HDB, CD) | | | | 1,2 | | | | | | | |

**Injection system EJOT MULTIFIX SE1000 SEISMIC for concrete**

**Performances**
Characteristic values of tension loads under static and quasi-static action

**Annex C 3**

## Table C4: Characteristic values of tension loads under static and quasi-static action for a working life of 100 years

| Anchor size threaded rod | | | | M8 | M10 | M12 | M16 | M20 | M24 | M27 | M30 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Steel failure | | | | | | | | | | | |
| Characteristic tension resistance | | $N_{Rk,s}$ | [kN] | $A_s \cdot f_{uk}$ (or see Table C1) | | | | | | | |
| Partial factor | | $\gamma_{Ms,N}$ | [-] | see Table C1 | | | | | | | |
| **Combined pull-out and concrete failure** | | | | | | | | | | | |
| Characteristic bond resistance in non-cracked concrete C20/25 in hammer drilled holes (HD) and compressed air drilled holes (CD) | | | | | | | | | | | |
| Temperature range I: 40°C/24°C | Dry, wet concrete and flooded bore hole | $\tau_{Rk,ucr,100}$ | [N/mm²] | 20 | 20 | 19 | 19 | 18 | 17 | 16 | 16 |
| Temperature range II: 72°C/50°C | | | | 15 | 15 | 15 | 14 | 13 | 13 | 12 | 12 |
| Characteristic bond resistance in non-cracked concrete C20/25 in hammer drilled holes with hollow drill bit (HDB) | | | | | | | | | | | |
| Temperature range I: 40°C/24°C | Dry, wet concrete | $\tau_{Rk,ucr,100}$ | [N/mm²] | 17 | 16 | 16 | 16 | 15 | 14 | 14 | 13 |
| Temperature range II: 72°C/50°C | | | | 14 | 14 | 14 | 13 | 13 | 12 | 12 | 11 |
| Temperature range I: 40°C/24°C | flooded bore hole | | | 16 | 16 | 16 | 15 | 15 | 14 | 14 | 13 |
| Temperature range II: 72°C/50°C | | | | 14 | 14 | 14 | 13 | 13 | 12 | 12 | 11 |
| Characteristic bond resistance in cracked concrete C20/25 in hammer drilled holes (HD) , compressed air drilled holes (CD) and with hollow drill bit (HDB) | | | | | | | | | | | |
| Temperature range I: 40°C/24°C | Dry, wet concrete and flooded bore hole | $\tau_{Rk,cr,100}$ | [N/mm²] | 6,5 | 6,5 | 7,5 | 7,5 | 7,5 | 7,5 | 7,5 | 7,5 |
| Temperature range II: 72°C/50°C | | | | 5,5 | 5,5 | 6,5 | 6,5 | 6,5 | 6,5 | 6,5 | 6,5 |
| Increasing factors for concrete $\Psi_c$ | | C25/30 | | 1,02 | | | | | | | |
| | | C30/37 | | 1,04 | | | | | | | |
| | | C35/45 | | 1,07 | | | | | | | |
| | | C40/50 | | 1,08 | | | | | | | |
| | | C45/55 | | 1,09 | | | | | | | |
| | | C50/60 | | 1,10 | | | | | | | |
| **Concrete cone failure** | | | | | | | | | | | |
| Relevant parameter | | | | see Table C2 | | | | | | | |
| **Splitting** | | | | | | | | | | | |
| Relevant parameter | | | | see Table C2 | | | | | | | |
| **Installation factor** | | | | | | | | | | | |
| for dry and wet concrete (HD; HDB, CD) | | $\gamma_{inst}$ | [-] | 1,0 | | | | | | | |
| for flooded bore hole (HD; HDB, CD) | | | | 1,2 | | | | | | | |

**Injection system EJOT MULTIFIX SE1000 SEISMIC for concrete**

**Performances**
Characteristic values of tension loads under static and quasi-static action

**Annex C 4**

## Table C5: Characteristic values of tension loads under static and quasi-static action for a working life of 50 and 100 years

| **Anchor size threaded rod** | | | | | **M8** | **M10** | **M12** | **M16** | **M20** | **M24** | **M27** | **M30** |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Steel failure | | | | | | | | | | | | |
| Characteristic tension resistance | | | $N_{Rk,s}$ | [kN] | $A_s \cdot f_{uk}$ (or see Table C1) | | | | | | | |
| Partial factor | | | $\gamma_{Ms,N}$ | [-] | see Table C1 | | | | | | | |
| **Combined pull-out and concrete failure for a working life of 50 years** | | | | | | | | | | | | |
| Characteristic bond resistance in non-cracked concrete C20/25 in diamond drilled holes (DD) | | | | | | | | | | | | |
| Temperature range | I: 40°C/24°C | Dry, wet concrete and flooded bore hole | $\tau_{Rk,ucr}$ | [N/mm²] | 15 | 14 | 14 | 13 | 12 | 12 | 11 | 11 |
| | II: 72°C/50°C | | | | 12 | 12 | 11 | 10 | 9,5 | 9,5 | 9,0 | 9,0 |
| Reduction factor $\psi^0_{sus}$ in non-cracked concrete C20/25 in diamond drilled holes (DD) | | | | | | | | | | | | |
| Temperature range | I: 40°C/24°C | Dry, wet concrete and flooded bore hole | $\psi^0_{sus}$ | [-] | 0,77 | | | | | | | |
| | II: 72°C/50°C | | | | 0,72 | | | | | | | |
| Increasing factors for concrete $\psi_c$ | | | C25/30 | | 1,04 | | | | | | | |
| | | | C30/37 | | 1,08 | | | | | | | |
| | | | C35/45 | | 1,12 | | | | | | | |
| | | | C40/50 | | 1,15 | | | | | | | |
| | | | C45/55 | | 1,17 | | | | | | | |
| | | | C50/60 | | 1,19 | | | | | | | |
| **Combined pull-out and concrete failure for a working life of 100 years** | | | | | | | | | | | | |
| Characteristic bond resistance in non-cracked concrete C20/25 in diamond drilled holes (DD) | | | | | | | | | | | | |
| Temperature range | I: 40°C/24°C | Dry, wet concrete and flooded bore hole | $\tau_{Rk,ucr,100}$ | [N/mm²] | 15 | 14 | 14 | 13 | 12 | 12 | 11 | 11 |
| | II: 72°C/50°C | | | | 11 | 11 | 10 | 10 | 9,5 | 9,0 | 8,5 | 8,5 |
| Increasing factors for concrete $\psi_c$ | | | C25/30 | | 1,04 | | | | | | | |
| | | | C30/37 | | 1,08 | | | | | | | |
| | | | C35/45 | | 1,12 | | | | | | | |
| | | | C40/50 | | 1,15 | | | | | | | |
| | | | C45/55 | | 1,17 | | | | | | | |
| | | | C50/60 | | 1,19 | | | | | | | |
| **Concrete cone failure** | | | | | | | | | | | | |
| Relevant parameter | | | | | see Table C2 | | | | | | | |
| **Splitting** | | | | | | | | | | | | |
| Relevant parameter | | | | | see Table C2 | | | | | | | |
| **Installation factor** | | | | | | | | | | | | |
| for dry and wet concrete (DD) | | | $\gamma_{inst}$ | [-] | 1,0 | | | | | | | |
| for flooded bore hole (DD) | | | | | 1,2 | | | 1,4 | | | | |

**Injection system EJOT MULTIFIX SE1000 SEISMIC for concrete**

**Performances**
Characteristic values of tension loads under static and quasi-static action

**Annex C 5**

**Table C6: Characteristic values of shear loads under static and quasi-static action**

| Anchor size threaded rod | | | M8 | M10 | M12 | M16 | M20 | M24 | M27 | M30 |
|---|---|---|---|---|---|---|---|---|---|---|
| **Steel failure without lever arm** | | | | | | | | | | |
| Characteristic shear resistance Steel, strength class 4.6, 4.8 and 5.6, 5.8 | $V^0_{Rk,s}$ | [kN] | $0,6 \cdot A_s \cdot f_{uk}$ (or see Table C1) | | | | | | | |
| Characteristic shear resistance Steel, strength class 8.8 Stainless Steel A2, A4 and HCR, all strength classes | $V^0_{Rk,s}$ | [kN] | $0,5 \cdot A_s \cdot f_{uk}$ (or see Table C1) | | | | | | | |
| Partial factor | $\gamma_{Ms,V}$ | [-] | see Table C1 | | | | | | | |
| Ductility factor | $k_7$ | [-] | 1,0 | | | | | | | |
| **Steel failure with lever arm** | | | | | | | | | | |
| Characteristic bending moment | $M^0_{Rk,s}$ | [Nm] | $1,2 \cdot W_{el} \cdot f_{uk}$ (or see Table C1) | | | | | | | |
| Elastic section modulus | $W_{el}$ | [mm³] | 31 | 62 | 109 | 277 | 541 | 935 | 1387 | 1874 |
| Partial factor | $\gamma_{Ms,V}$ | [-] | see Table C1 | | | | | | | |
| **Concrete pry-out failure** | | | | | | | | | | |
| Factor | $k_8$ | [-] | 2,0 | | | | | | | |
| Installation factor | $\gamma_{inst}$ | [-] | 1,0 | | | | | | | |
| **Concrete edge failure** | | | | | | | | | | |
| Effective length of fastener | $l_f$ | [mm] | $\min(h_{ef}; 12 \cdot d_{nom})$ | | | | | | $\min(h_{ef}; 300mm)$ | |
| Outside diameter of fastener | $d_{nom}$ | [mm] | 8 | 10 | 12 | 16 | 20 | 24 | 27 | 30 |
| Installation factor | $\gamma_{inst}$ | [-] | 1,0 | | | | | | | |

## Table C7: Characteristic values of tension loads under static and quasi-static action for a working life of 50 years

| Anchor size internal threaded anchor rods | | | | | IG-M6 | IG-M8 | IG-M10 | IG-M12 | IG-M16 | IG-M20 |
|---|---|---|---|---|---|---|---|---|---|---|
| **Steel failure**[1] | | | | | | | | | | |
| Characteristic tension resistance, Steel, strength class | 5.8 | $N_{Rk,s}$ | [kN] | | 10 | 17 | 29 | 42 | 76 | 123 |
| | 8.8 | $N_{Rk,s}$ | [kN] | | 16 | 27 | 46 | 67 | 121 | 196 |
| Partial factor, strength class 5.8 and 8.8 | | $\gamma_{Ms,N}$ | [-] | | 1,5 | | | | | |
| Characteristic tension resistance, Stainless Steel A4 and HCR, Strength class 70 [2] | | $N_{Rk,s}$ | [kN] | | 14 | 26 | 41 | 59 | 110 | 124 |
| Partial factor | | $\gamma_{Ms,N}$ | [-] | | 1,87 | | | | | 2,86 |
| **Combined pull-out and concrete cone failure** | | | | | | | | | | |
| Characteristic bond resistance in non-cracked concrete C20/25 in hammer drilled holes (HD) and compressed air drilled holes (CD) | | | | | | | | | | |
| Temperature range | I: 40°C/24°C | Dry, wet concrete and flooded bore hole | $\tau_{Rk,ucr}$ | [N/mm²] | 20 | 19 | 19 | 18 | 17 | 16 |
| | II: 72°C/50°C | | | | 15 | 15 | 14 | 13 | 13 | 12 |
| Characteristic bond resistance in non-cracked concrete C20/25 in hammer drilled holes with hollow drill bit (HDB) | | | | | | | | | | |
| Temperature range | I: 40°C/24°C | Dry, wet concrete | $\tau_{Rk,ucr}$ | [N/mm²] | 16 | 16 | 16 | 15 | 14 | 13 |
| | II: 72°C/50°C | | | | 14 | 14 | 13 | 13 | 12 | 11 |
| | I: 40°C/24°C | flooded bore hole | | | 16 | 16 | 15 | 15 | 14 | 13 |
| | II: 72°C/50°C | | | | 14 | 14 | 13 | 13 | 12 | 11 |
| Characteristic bond resistance in cracked concrete C20/25 in hammer drilled holes (HD), compressed air drilled holes (CD) and with hollow drill bit (HDB) | | | | | | | | | | |
| Temperature range | I: 40°C/24°C | Dry, wet concrete and flooded bore hole | $\tau_{Rk,cr}$ | [N/mm²] | 7,0 | 8,5 | 8,5 | 8,5 | 8,5 | 8,5 |
| | II: 72°C/50°C | | | | 6,0 | 7,0 | 7,0 | 7,0 | 7,0 | 7,0 |
| Reduction factor $\psi^0_{sus}$ in cracked and non-cracked concrete C20/25 in hammer drilled holes (HD), compressed air drilled holes (CD) and with hollow drill bit (HDB) | | | | | | | | | | |
| Temperature range | I: 40°C/24°C | Dry, wet concrete and flooded bore hole | $\psi^0_{sus}$ | [-] | 0,80 | | | | | |
| | II: 72°C/50°C | | | | 0,68 | | | | | |
| Increasing factors for concrete $\psi_c$ | | | C25/30 | | 1,02 | | | | | |
| | | | C30/37 | | 1,04 | | | | | |
| | | | C35/45 | | 1,07 | | | | | |
| | | | C40/50 | | 1,08 | | | | | |
| | | | C45/55 | | 1,09 | | | | | |
| | | | C50/60 | | 1,10 | | | | | |
| **Concrete cone failure** | | | | | | | | | | |
| Relevant parameter | | | | | see Table C2 | | | | | |
| **Splitting failure** | | | | | | | | | | |
| Relevant parameter | | | | | see Table C2 | | | | | |
| **Installation factor** | | | | | | | | | | |
| for dry and wet concrete (HD; HDB, CD) | | $\gamma_{inst}$ | [-] | | 1,0 | | | | | |
| for flooded bore hole (HD; HDB, CD) | | | | | 1,2 | | | | | |

[1] Fastenings (incl. nut and washer) must comply with the appropriate material and property class of the internal threaded rod. The characteristic tension resistance for steel failure is valid for the internal threaded rod and the fastening element.
[2] For IG-M20 strength class 50 is valid

**Injection system EJOT MULTIFIX SE1000 SEISMIC for concrete**

**Performances**
Characteristic values of tension loads under static and quasi-static action

**Annex C 7**

## Table C8: Characteristic values of tension loads under static and quasi-static action for a working life of 100 years

| Anchor size internal threaded anchor rods | | | | | IG-M6 | IG-M8 | IG-M10 | IG-M12 | IG-M16 | IG-M20 |
|---|---|---|---|---|---|---|---|---|---|---|
| **Steel failure**[1] | | | | | | | | | | |
| Characteristic tension resistance, Steel, strength class | 5.8 | | $N_{Rk,s}$ | [kN] | 10 | 17 | 29 | 42 | 76 | 123 |
| | 8.8 | | $N_{Rk,s}$ | [kN] | 16 | 27 | 46 | 67 | 121 | 196 |
| Partial factor, strength class 5.8 and 8.8 | | | $\gamma_{Ms,N}$ | [-] | 1,5 | | | | | |
| Characteristic tension resistance, Stainless Steel A4 and HCR, Strength class 70 [2] | | | $N_{Rk,s}$ | [kN] | 14 | 26 | 41 | 59 | 110 | 124 |
| Partial factor | | | $\gamma_{Ms,N}$ | [-] | 1,87 | | | | | 2,86 |
| **Combined pull-out and concrete cone failure** | | | | | | | | | | |
| Characteristic bond resistance in non-cracked concrete C20/25 in hammer drilled holes (HD) and compressed air drilled holes (CD) | | | | | | | | | | |
| Temperature range | I: 40°C/24°C | Dry, wet concrete and flooded bore hole | $\tau_{Rk,ucr,100}$ | [N/mm²] | 20 | 19 | 19 | 18 | 17 | 16 |
| | II: 72°C/50°C | | | | 15 | 15 | 14 | 13 | 13 | 12 |
| Characteristic bond resistance in non-cracked concrete C20/25 in hammer drilled holes with hollow drill bit (HDB) | | | | | | | | | | |
| Temperature range | I: 40°C/24°C | Dry, wet concrete | $\tau_{Rk,ucr,100}$ | [N/mm²] | 16 | 16 | 16 | 15 | 14 | 13 |
| | II: 72°C/50°C | | | | 14 | 14 | 13 | 13 | 12 | 11 |
| | I: 40°C/24°C | flooded bore hole | | | 16 | 16 | 15 | 15 | 14 | 13 |
| | II: 72°C/50°C | | | | 14 | 14 | 13 | 13 | 12 | 11 |
| Characteristic bond resistance in cracked concrete C20/25 in hammer drilled holes (HD), compressed air drilled holes (CD) and with hollow drill bit (HDB) | | | | | | | | | | |
| Temperature range | I: 40°C/24°C | Dry, wet concrete and flooded bore hole | $\tau_{Rk,ucr,100}$ | [N/mm²] | 6,5 | 7,5 | 7,5 | 7,5 | 7,5 | 7,5 |
| | II: 72°C/50°C | | | | 5,5 | 6,5 | 6,5 | 6,5 | 6,5 | 6,5 |
| Increasing factors for concrete $\psi_c$ | | | C25/30 | | 1,02 | | | | | |
| | | | C30/37 | | 1,04 | | | | | |
| | | | C35/45 | | 1,07 | | | | | |
| | | | C40/50 | | 1,08 | | | | | |
| | | | C45/55 | | 1,09 | | | | | |
| | | | C50/60 | | 1,10 | | | | | |
| **Concrete cone failure** | | | | | | | | | | |
| Relevant parameter | | | | | see Table C2 | | | | | |
| **Splitting failure** | | | | | | | | | | |
| Relevant parameter | | | | | see Table C2 | | | | | |
| **Installation factor** | | | | | | | | | | |
| for dry and wet concrete (HD; HDB, CD) | | | $\gamma_{inst}$ | [-] | 1,0 | | | | | |
| for flooded bore hole (HD; HDB, CD) | | | | | 1,2 | | | | | |

[3] Fastenings (incl. nut and washer) must comply with the appropriate material and property class of the internal threaded rod. The characteristic tension resistance for steel failure is valid for the internal threaded rod and the fastening element.

[4] For IG-M20 strength class 50 is valid

**Injection system EJOT MULTIFIX SE1000 SEISMIC for concrete**

**Performances**
Characteristic values of tension loads under static and quasi-static action

**Annex C 8**

## Table C9: Characteristic values of tension loads under static and quasi-static action for a working life of 50 years

| Anchor size internal threaded anchor rods | | | | | IG-M6 | IG-M8 | IG-M10 | IG-M12 | IG-M16 | IG-M20 |
|---|---|---|---|---|---|---|---|---|---|---|
| **Steel failure**[1] | | | | | | | | | | |
| Characteristic tension resistance, Steel, strength class | 5.8 | | $N_{Rk,s}$ | [kN] | 10 | 17 | 29 | 42 | 76 | 123 |
| | 8.8 | | $N_{Rk,s}$ | [kN] | 16 | 27 | 46 | 67 | 121 | 196 |
| Partial factor, strength class 5.8 and 8.8 | | | $\gamma_{Ms,N}$ | [-] | 1,5 | | | | | |
| Characteristic tension resistance, Stainless Steel A4 and HCR, Strength class 70 [2] | | | $N_{Rk,s}$ | [kN] | 14 | 26 | 41 | 59 | 110 | 124 |
| Partial factor | | | $\gamma_{Ms,N}$ | [-] | 1,87 | | | | | 2,86 |
| **Combined pull-out and concrete cone failure for a working life of 50 years** | | | | | | | | | | |
| Characteristic bond resistance in non-cracked concrete C20/25 in diamond drilled holes (DD) | | | | | | | | | | |
| Temperature range | I: 40°C/24°C | Dry, wet concrete and flooded bore hole | $\tau_{Rk,ucr}$ | [N/mm²] | 14 | 14 | 13 | 12 | 12 | 11 |
| | II: 72°C/50°C | | | | 12 | 11 | 10 | 9,5 | 9,5 | 9,0 |
| Reduction factor $\psi^0_{sus}$ in non-cracked concrete C20/25 in diamond drilled holes (DD) | | | | | | | | | | |
| Temperature range | I: 40°C/24°C | Dry, wet concrete and flooded bore hole | $\psi^0_{sus}$ | [-] | 0,77 | | | | | |
| | II: 72°C/50°C | | | | 0,72 | | | | | |
| Increasing factors for concrete $\psi_c$ | | | C25/30 | | 1,04 | | | | | |
| | | | C30/37 | | 1,08 | | | | | |
| | | | C35/45 | | 1,12 | | | | | |
| | | | C40/50 | | 1,15 | | | | | |
| | | | C45/55 | | 1,17 | | | | | |
| | | | C50/60 | | 1,19 | | | | | |
| **Combined pull-out and concrete cone failure for a working life of 100 years** | | | | | | | | | | |
| Characteristic bond resistance in non-cracked concrete C20/25 in diamond drilled holes (DD) | | | | | | | | | | |
| Temperature range | I: 40°C/24°C | Dry, wet concrete and flooded bore hole | $\tau_{Rk,ucr,100}$ | [N/mm²] | 14 | 14 | 13 | 12 | 12 | 11 |
| | II: 72°C/50°C | | | | 11 | 10 | 10 | 9,5 | 9,0 | 8,5 |
| Increasing factors for concrete $\psi_c$ | | | C25/30 | | 1,04 | | | | | |
| | | | C30/37 | | 1,08 | | | | | |
| | | | C35/45 | | 1,12 | | | | | |
| | | | C40/50 | | 1,15 | | | | | |
| | | | C45/55 | | 1,17 | | | | | |
| | | | C50/60 | | 1,19 | | | | | |
| **Concrete cone failure** | | | | | | | | | | |
| Relevant parameter | | | | | see Table C2 | | | | | |
| **Splitting failure** | | | | | | | | | | |
| Relevant parameter | | | | | see Table C2 | | | | | |
| **Installation factor** | | | | | | | | | | |
| for dry and wet concrete (DD) | | | $\gamma_{inst}$ | [-] | 1,0 | | | | | |
| for flooded bore hole (DD) | | | | | 1,2 | | 1,4 | | | |

[1] Fastenings (incl. nut and washer) must comply with the appropriate material and property class of the internal threaded rod. The characteristic tension resistance for steel failure is valid for the internal threaded rod and the fastening element.

[2] For IG-M20 strength class 50 is valid

**Injection system EJOT MULTIFIX SE1000 SEISMIC for concrete**

**Performances**
Characteristic values of tension loads under static and quasi-static action

**Annex C 9**

## Table C10: Characteristic values of shear loads under static and quasi-static action

| Anchor size for internal threaded anchor rods | | | | IG-M6 | IG-M8 | IG-M10 | IG-M12 | IG-M16 | IG-M20 |
|---|---|---|---|---|---|---|---|---|---|
| **Steel failure without lever arm[1)]** | | | | | | | | | |
| Characteristic shear resistance, Steel, strength class | 5.8 | $V^0_{Rk,s}$ | [kN] | 5 | 9 | 15 | 21 | 38 | 61 |
| | 8.8 | $V^0_{Rk,s}$ | [kN] | 8 | 14 | 23 | 34 | 60 | 98 |
| Partial factor, strength class 5.8 and 8.8 | | $\gamma_{Ms,V}$ | [-] | 1,25 | | | | | |
| Characteristic shear resistance, Stainless Steel A4 and HCR, Strength class 70[2)] | | $V^0_{Rk,s}$ | [kN] | 7 | 13 | 20 | 30 | 55 | 40 |
| Partial factor | | $\gamma_{Ms,V}$ | [-] | 1,56 | | | | | 2,38 |
| Ductility factor | | $k_7$ | [-] | 1,0 | | | | | |
| **Steel failure with lever arm[1)]** | | | | | | | | | |
| Characteristic bending moment, Steel, strength class | 5.8 | $M^0_{Rk,s}$ | [Nm] | 8 | 19 | 37 | 66 | 167 | 325 |
| | 8.8 | $M^0_{Rk,s}$ | [Nm] | 12 | 30 | 60 | 105 | 267 | 519 |
| Partial factor, strength class 5.8 and 8.8 | | $\gamma_{Ms,V}$ | [-] | 1,25 | | | | | |
| Characteristic bending moment, Stainless Steel A4 and HCR, Strength class 70[2)] | | $M^0_{Rk,s}$ | [Nm] | 11 | 26 | 52 | 92 | 233 | 456 |
| Partial factor | | $\gamma_{Ms,V}$ | [-] | 1,56 | | | | | 2,38 |
| **Concrete pry-out failure** | | | | | | | | | |
| Factor | | $k_8$ | [-] | 2,0 | | | | | |
| Installation factor | | $\gamma_{inst}$ | [-] | 1,0 | | | | | |
| **Concrete edge failure** | | | | | | | | | |
| Effective length of fastener | | $l_f$ | [mm] | $\min(h_{ef}; 12 \cdot d_{nom})$ | | | | | $\min(h_{ef}; 300mm)$ |
| Outside diameter of fastener | | $d_{nom}$ | [mm] | 10 | 12 | 16 | 20 | 24 | 30 |
| Installation factor | | $\gamma_{inst}$ | [-] | 1,0 | | | | | |

[1)] Fastenings (incl. nut and washer) must comply with the appropriate material and property class of the internal threaded rod. The characteristic tension resistance for steel failure is valid for the internal threaded rod and the fastening element.
[2)] For IG-M20 strength class 50 is valid

## Table C11: Characteristic values of tension loads under static and quasi-static action for a working life of 50 years

| Anchor size reinforcing bar | | | | Ø 8 | Ø 10 | Ø 12 | Ø 14 | Ø 16 | Ø 20 | Ø 24 | Ø 25 | Ø 28 | Ø 32 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Steel failure** | | | | | | | | | | | | | |
| Characteristic tension resistance | | $N_{Rk,s}$ | [kN] | $A_s \cdot f_{uk}$ [1] | | | | | | | | | |
| Cross section area | | $A_s$ | [mm²] | 50 | 79 | 113 | 154 | 201 | 314 | 452 | 491 | 616 | 804 |
| Partial factor | | $\gamma_{Ms,N}$ | [-] | 1,4 [2] | | | | | | | | | |
| **Combined pull-out and concrete failure** | | | | | | | | | | | | | |
| Characteristic bond resistance in non-cracked concrete C20/25 in hammer drilled holes (HD) and compressed air drilled holes (CD) | | | | | | | | | | | | | |
| Temperature range I: 40°C/24°C | Dry, wet concrete and flooded bore hole | $\tau_{Rk,ucr}$ | [N/mm²] | 16 | 16 | 16 | 16 | 16 | 16 | 15 | 15 | 15 | 15 |
| Temperature range II: 72°C/50°C | | | | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 11 | 11 |
| Characteristic bond resistance in non-cracked concrete C20/25 in hammer drilled holes with hollow drill bit (HDB) | | | | | | | | | | | | | |
| Temperature range I: 40°C/24°C | Dry, wet concrete | $\tau_{Rk,ucr}$ | [N/mm²] | 14 | 14 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 |
| Temperature range II: 72°C/50°C | | | | 12 | 12 | 12 | 11 | 11 | 11 | 11 | 11 | 11 | 11 |
| Temperature range I: 40°C/24°C | flooded bore hole | | | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 |
| Temperature range II: 72°C/50°C | | | | 11 | 11 | 11 | 11 | 11 | 11 | 11 | 11 | 11 | 11 |
| Characteristic bond resistance in cracked concrete C20/25 in hammer drilled holes (HD), compressed air drilled holes (CD) and with hollow drill bit (HDB) | | | | | | | | | | | | | |
| Temperature range I: 40°C/24°C | Dry, wet concrete and flooded bore hole | $\tau_{Rk,cr}$ | [N/mm²] | 7,0 | 7,0 | 8,5 | 8,5 | 8,5 | 8,5 | 8,5 | 8,5 | 8,5 | 8,5 |
| Temperature range II: 72°C/50°C | | | | 6,0 | 6,0 | 7,0 | 7,0 | 7,0 | 7,0 | 7,0 | 7,0 | 7,0 | 7,0 |
| Reduction factor $\psi^0_{sus}$ in cracked and non-cracked concrete C20/25 in hammer drilled holes (HD), compressed air drilled holes (CD) and with hollow drill bit (HDB) | | | | | | | | | | | | | |
| Temperature range I: 40°C/24°C | Dry, wet concrete and flooded bore hole | $\psi^0_{sus}$ | [-] | 0,80 | | | | | | | | | |
| Temperature range II: 72°C/50°C | | | | 0,68 | | | | | | | | | |
| Increasing factors for concrete $\psi_c$ | | C25/30 | | 1,02 | | | | | | | | | |
| | | C30/37 | | 1,04 | | | | | | | | | |
| | | C35/45 | | 1,07 | | | | | | | | | |
| | | C40/50 | | 1,08 | | | | | | | | | |
| | | C45/55 | | 1,09 | | | | | | | | | |
| | | C50/60 | | 1,10 | | | | | | | | | |
| **Concrete cone failure** | | | | | | | | | | | | | |
| Relevant parameter | | | | see Table C2 | | | | | | | | | |
| **Splitting** | | | | | | | | | | | | | |
| Relevant parameter | | | | see Table C2 | | | | | | | | | |
| **Installation factor** | | | | | | | | | | | | | |
| for dry and wet concrete (HD; HDB, CD)<br>for flooded bore hole (HD; HDB, CD) | | $\gamma_{inst}$ | [-] | 1,0<br>1,2 | | | | | | | | | |

[1] $f_{uk}$ shall be taken from the specifications of reinforcing bars
[2] in absence of national regulation

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**Performances**
Characteristic values of tension loads under static and quasi-static action

**Annex C 11**

## Table C12: Characteristic values of tension loads under static and quasi-static action for a working life of 100 years

| Anchor size reinforcing bar | | | | Ø 8 | Ø 10 | Ø 12 | Ø 14 | Ø 16 | Ø 20 | Ø 24 | Ø 25 | Ø 28 | Ø 32 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Steel failure** | | | | | | | | | | | | | |
| Characteristic tension resistance | | $N_{Rk,s}$ | [kN] | $A_s \cdot f_{uk}$ [1] | | | | | | | | | |
| Cross section area | | $A_s$ | [mm²] | 50 | 79 | 113 | 154 | 201 | 314 | 452 | 491 | 616 | 804 |
| Partial factor | | $\gamma_{Ms,N}$ | [-] | 1,4 [2] | | | | | | | | | |
| **Combined pull-out and concrete failure** | | | | | | | | | | | | | |
| Characteristic bond resistance in non-cracked concrete C20/25 in hammer drilled holes (HD) and compressed air drilled holes (CD) | | | | | | | | | | | | | |
| Temperature range I: 40°C/24°C | Dry, wet concrete and flooded bore hole | $\tau_{Rk,ucr,100}$ | [N/mm²] | 16 | 16 | 16 | 16 | 16 | 16 | 15 | 15 | 15 | 15 |
| Temperature range II: 72°C/50°C | | | | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 11 | 11 |
| Characteristic bond resistance in non-cracked concrete C20/25 in hammer drilled holes with hollow drill bit (HDB) | | | | | | | | | | | | | |
| Temperature range I: 40°C/24°C | Dry, wet concrete | $\tau_{Rk,ucr,100}$ | [N/mm²] | 14 | 14 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 |
| Temperature range II: 72°C/50°C | | | | 12 | 12 | 12 | 11 | 11 | 11 | 11 | 11 | 11 | 11 |
| Temperature range I: 40°C/24°C | flooded bore hole | | | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 |
| Temperature range II: 72°C/50°C | | | | 11 | 11 | 11 | 11 | 11 | 11 | 11 | 11 | 11 | 11 |
| Characteristic bond resistance in cracked concrete C20/25 in hammer drilled holes (HD), compressed air drilled holes (CD) and with hollow drill bit (HDB) | | | | | | | | | | | | | |
| Temperature range I: 40°C/24°C | Dry, wet concrete and flooded bore hole | $\tau_{Rk,cr,100}$ | [N/mm²] | 6,5 | 6,5 | 7,5 | 7,5 | 7,5 | 7,5 | 7,5 | 7,5 | 7,5 | 7,5 |
| Temperature range II: 72°C/50°C | | | | 5,5 | 5,5 | 6,5 | 6,5 | 6,5 | 6,5 | 6,5 | 6,5 | 6,5 | 6,5 |
| Increasing factors for concrete $\psi_c$ | | C25/30 | | 1,02 | | | | | | | | | |
| | | C30/37 | | 1,04 | | | | | | | | | |
| | | C35/45 | | 1,07 | | | | | | | | | |
| | | C40/50 | | 1,08 | | | | | | | | | |
| | | C45/55 | | 1,09 | | | | | | | | | |
| | | C50/60 | | 1,10 | | | | | | | | | |
| **Concrete cone failure** | | | | | | | | | | | | | |
| Relevant parameter | | | | see Table C2 | | | | | | | | | |
| **Splitting** | | | | | | | | | | | | | |
| Relevant parameter | | | | see Table C2 | | | | | | | | | |
| **Installation factor** | | | | | | | | | | | | | |
| for dry and wet concrete (HD; HDB, CD) | | $\gamma_{inst}$ | [-] | 1,0 | | | | | | | | | |
| for flooded bore hole (HD; HDB, CD) | | | | 1,2 | | | | | | | | | |

[1] $f_{uk}$ shall be taken from the specifications of reinforcing bars
[2] in absence of national regulation

**Injection system EJOT MULTIFIX SE1000 SEISMIC for concrete**

**Performances**
Characteristic values of tension loads under static and quasi-static action

**Annex C 12**

## Table C13: Characteristic values of tension loads under static and quasi-static action for a working life of 50 and 100 years

| Anchor size reinforcing bar | | | | Ø 8 | Ø 10 | Ø 12 | Ø 14 | Ø 16 | Ø 20 | Ø 24 | Ø 25 | Ø 28 | Ø 32 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Steel failure** | | | | | | | | | | | | | |
| Characteristic tension resistance | | $N_{Rk,s}$ | [kN] | $A_s \cdot f_{uk}$ [1] | | | | | | | | | |
| Cross section area | | $A_s$ | [mm²] | 50 | 79 | 113 | 154 | 201 | 314 | 452 | 491 | 616 | 804 |
| Partial factor | | $\gamma_{Ms,N}$ | [-] | 1,4 [2] | | | | | | | | | |
| **Combined pull-out and concrete failure for a working life of 50 years** | | | | | | | | | | | | | |
| Characteristic bond resistance in non-cracked concrete C20/25 in diamond drilled holes (DD) | | | | | | | | | | | | | |
| Temperature range I: 40°C/24°C | Dry, wet concrete and flooded bore hole | $\tau_{Rk,ucr}$ | [N/mm²] | 14 | 13 | 13 | 13 | 12 | 12 | 11 | 11 | 11 | 11 |
| Temperature range II: 72°C/50°C | Dry, wet concrete and flooded bore hole | $\tau_{Rk,ucr}$ | [N/mm²] | 11 | 11 | 10 | 10 | 10 | 9,5 | 9,5 | 9,5 | 9,0 | 9,0 |
| Reduction factor $\psi^0_{sus}$ in non-cracked concrete C20/25 in diamond drilled holes (DD) | | | | | | | | | | | | | |
| Temperature range I: 40°C/24°C | Dry, wet concrete and flooded bore hole | $\psi^0_{sus}$ | [-] | 0,77 | | | | | | | | | |
| Temperature range II: 72°C/50°C | Dry, wet concrete and flooded bore hole | $\psi^0_{sus}$ | [-] | 0,72 | | | | | | | | | |
| Increasing factors for concrete $\psi_c$ | | C25/30 | | 1,04 | | | | | | | | | |
| | | C30/37 | | 1,08 | | | | | | | | | |
| | | C35/45 | | 1,12 | | | | | | | | | |
| | | C40/50 | | 1,15 | | | | | | | | | |
| | | C45/55 | | 1,17 | | | | | | | | | |
| | | C50/60 | | 1,19 | | | | | | | | | |
| **Combined pull-out and concrete failure for a working life of 100 years** | | | | | | | | | | | | | |
| Characteristic bond resistance in non-cracked concrete C20/25 in diamond drilled holes (DD) | | | | | | | | | | | | | |
| Temperature range I: 40°C/24°C | Dry, wet concrete and flooded bore hole | $\tau_{Rk,ucr,100}$ | [N/mm²] | 14 | 13 | 13 | 13 | 12 | 12 | 11 | 11 | 11 | 11 |
| Temperature range II: 72°C/50°C | Dry, wet concrete and flooded bore hole | $\tau_{Rk,ucr,100}$ | [N/mm²] | 11 | 10 | 10 | 10 | 9.5 | 9.0 | 9.0 | 9.0 | 8.5 | 8.5 |
| Increasing factors for concrete $\psi_c$ | | C25/30 | | 1,04 | | | | | | | | | |
| | | C30/37 | | 1,08 | | | | | | | | | |
| | | C35/45 | | 1,12 | | | | | | | | | |
| | | C40/50 | | 1,15 | | | | | | | | | |
| | | C45/55 | | 1,17 | | | | | | | | | |
| | | C50/60 | | 1,19 | | | | | | | | | |
| **Concrete cone failure** | | | | | | | | | | | | | |
| Relevant parameter | | | | see Table C2 | | | | | | | | | |
| **Splitting** | | | | | | | | | | | | | |
| Relevant parameter | | | | see Table C2 | | | | | | | | | |
| **Installation factor** | | | | | | | | | | | | | |
| for dry and wet concrete (DD) | | $\gamma_{inst}$ | [-] | 1,0 | | | | | | | | | |
| for flooded bore hole (DD) | | $\gamma_{inst}$ | [-] | 1,2 | | | | 1,4 | | | | | |

[1] $f_{uk}$ shall be taken from the specifications of reinforcing bars
[2] in absence of national regulation

**Injection system EJOT MULTIFIX SE1000 SEISMIC for concrete**

**Performances**
Characteristic values of tension loads under static and quasi-static action

**Annex C 13**

**Table C14: Characteristic values of shear loads under static and quasi-static action**

| **Anchor size reinforcing bar** | | | **Ø 8** | **Ø 10** | **Ø 12** | **Ø 14** | **Ø 16** | **Ø 20** | **Ø 24** | **Ø 25** | **Ø 28** | **Ø 32** |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Steel failure without lever arm** | | | | | | | | | | | | |
| Characteristic shear resistance | $V^0_{Rk,s}$ | [kN] | $0,5 \cdot A_s \cdot f_{uk}$ [1)] | | | | | | | | | |
| Cross section area | $A_s$ | [mm²] | 50 | 79 | 113 | 154 | 201 | 314 | 452 | 491 | 616 | 804 |
| Partial factor | $\gamma_{Ms,V}$ | [-] | 1,5 [2)] | | | | | | | | | |
| Ductility factor | $k_7$ | [-] | 1,0 | | | | | | | | | |
| **Steel failure with lever arm** | | | | | | | | | | | | |
| Characteristic bending moment | $M^0_{Rk,s}$ | [Nm] | $1.2 \cdot W_{el} \cdot f_{uk}$ [1)] | | | | | | | | | |
| Elastic section modulus | $W_{el}$ | [mm³] | 50 | 98 | 170 | 269 | 402 | 785 | 1357 | 1534 | 2155 | 3217 |
| Partial factor | $\gamma_{Ms,V}$ | [-] | 1,5 [2)] | | | | | | | | | |
| **Concrete pry-out failure** | | | | | | | | | | | | |
| Factor | $k_8$ | [-] | 2,0 | | | | | | | | | |
| Installation factor | $\gamma_{inst}$ | [-] | 1,0 | | | | | | | | | |
| **Concrete edge failure** | | | | | | | | | | | | |
| Effective length of fastener | $l_f$ | [mm] | $\min(h_{ef}; 12 \cdot d_{nom})$ | | | | | | | $\min(h_{ef}; 300mm)$ | | |
| Outside diameter of fastener | $d_{nom}$ | [mm] | 8 | 10 | 12 | 14 | 16 | 20 | 24 | 25 | 28 | 32 |
| Installation factor | $\gamma_{inst}$ | [-] | 1,0 | | | | | | | | | |

[1)] $f_{uk}$ shall be taken from the specifications of reinforcing bars
[2)] in absence of national regulation

## Table C15: Displacements under tension load[1] in hammer drilled holes (HD), compressed air drilled holes (CD) and with hollow drill bit (HDB)

| Anchor size threaded rod | | | M8 | M10 | M12 | M16 | M20 | M24 | M27 | M30 |
|---|---|---|---|---|---|---|---|---|---|---|
| **Non-cracked concrete under static and quasi-static action for a working life of 50 and 100 years** | | | | | | | | | | |
| Temperature range I: 40°C/24°C | $\delta_{N0}$-factor | [mm/(N/mm²)] | 0,028 | 0,029 | 0,030 | 0,033 | 0,035 | 0,038 | 0,039 | 0,041 |
| | $\delta_{N\infty}$-factor | [mm/(N/mm²)] | 0,028 | 0,029 | 0,030 | 0,033 | 0,035 | 0,038 | 0,039 | 0,041 |
| Temperature range II: 72°C/50°C | $\delta_{N0}$-factor | [mm/(N/mm²)] | 0,038 | 0,039 | 0,040 | 0,044 | 0,047 | 0,051 | 0,052 | 0,055 |
| | $\delta_{N\infty}$-factor | [mm/(N/mm²)] | 0,047 | 0,049 | 0,051 | 0,055 | 0,059 | 0,064 | 0,067 | 0,070 |
| **Cracked concrete under static and quasi-static action for a working life of 50 and 100 years** | | | | | | | | | | |
| Temperature range I: 40°C/24°C | $\delta_{N0}$-factor | [mm/(N/mm²)] | 0,069 | 0,071 | 0,072 | 0,074 | 0,076 | 0,079 | 0,081 | 0,082 |
| | $\delta_{N\infty}$-factor | [mm/(N/mm²)] | 0,100 | 0,115 | 0,122 | 0,128 | 0,135 | 0,142 | 0,155 | 0,171 |
| Temperature range II: 72°C/50°C | $\delta_{N0}$-factor | [mm/(N/mm²)] | 0,092 | 0,095 | 0,096 | 0,099 | 0,102 | 0,106 | 0,109 | 0,110 |
| | $\delta_{N\infty}$-factor | [mm/(N/mm²)] | 0,134 | 0,154 | 0,163 | 0,172 | 0,181 | 0,189 | 0,207 | 0,229 |

[1] Calculation of the displacement
$\delta_{N0} = \delta_{N0}\text{-factor} \cdot \tau$; $\tau$: action bond stress for tension
$\delta_{N\infty} = \delta_{N\infty}\text{-factor} \cdot \tau$;

## Table C16: Displacements under tension load[1] in diamond drilled holes (DD)

| Anchor size threaded rod | | | M8 | M10 | M12 | M16 | M20 | M24 | M27 | M30 |
|---|---|---|---|---|---|---|---|---|---|---|
| **Non-cracked concrete under static and quasi-static action for a working life of 50 years** | | | | | | | | | | |
| Temperature range I: 40°C/24°C | $\delta_{N0}$-factor | [mm/(N/mm²)] | 0,011 | 0,012 | 0,012 | 0,013 | 0,014 | 0,014 | 0,015 | 0,015 |
| | $\delta_{N\infty}$-factor | [mm/(N/mm²)] | 0,018 | 0,019 | 0,019 | 0,020 | 0,022 | 0,023 | 0,024 | 0,025 |
| Temperature range II: 72°C/50°C | $\delta_{N0}$-factor | [mm/(N/mm²)] | 0,013 | 0,014 | 0,014 | 0,015 | 0,016 | 0,016 | 0,018 | 0,018 |
| | $\delta_{N\infty}$-factor | [mm/(N/mm²)] | 0,052 | 0,053 | 0,055 | 0,058 | 0,062 | 0,065 | 0,068 | 0,070 |
| **Non-cracked concrete under static and quasi-static action for a working life of 100 years** | | | | | | | | | | |
| Temperature range I: 40°C/24°C | $\delta_{N0}$-factor | [mm/(N/mm²)] | 0,011 | 0,012 | 0,012 | 0,013 | 0,014 | 0,014 | 0,015 | 0,015 |
| | $\delta_{N\infty}$-factor | [mm/(N/mm²)] | 0,020 | 0,021 | 0,021 | 0,023 | 0,024 | 0,025 | 0,026 | 0,027 |
| Temperature range II: 72°C/50°C | $\delta_{N0}$-factor | [mm/(N/mm²)] | 0,013 | 0,014 | 0,014 | 0,015 | 0,016 | 0,016 | 0,018 | 0,018 |
| | $\delta_{N\infty}$-factor | [mm/(N/mm²)] | 0,038 | 0,039 | 0,040 | 0,043 | 0,045 | 0,047 | 0,049 | 0,051 |

[1] Calculation of the displacement
$\delta_{N0} = \delta_{N0}\text{-factor} \cdot \tau$; $\tau$: action bond stress for tension
$\delta_{N\infty} = \delta_{N\infty}\text{-factor} \cdot \tau$;

## Table C17: Displacements under shear load[1] for all drilling methods

| Anchor size threaded rod | | | M8 | M10 | M12 | M16 | M20 | M24 | M27 | M30 |
|---|---|---|---|---|---|---|---|---|---|---|
| **Non-cracked and cracked concrete under static and quasi-static action** | | | | | | | | | | |
| All temperature ranges | $\delta_{V0}$-factor | [mm/kN] | 0,06 | 0,06 | 0,05 | 0,04 | 0,04 | 0,03 | 0,03 | 0,03 |
| | $\delta_{V\infty}$-factor | [mm/kN] | 0,09 | 0,08 | 0,08 | 0,06 | 0,06 | 0,05 | 0,05 | 0,05 |

[1] Calculation of the displacement
$\delta_{V0} = \delta_{V0}\text{-factor} \cdot V$; V: action shear load
$\delta_{V\infty} = \delta_{V\infty}\text{-factor} \cdot V$;

**Injection system EJOT MULTIFIX SE1000 SEISMIC for concrete**

**Performances**
Displacements under static and quasi-static action (threaded rods)

**Annex C 15**

## Table C18: Displacements under tension load[1] in hammer drilled holes (HD), compressed air drilled holes (CD) and with hollow drill bit (HDB)

| Anchor size Internal threaded anchor rod | | | IG-M6 | IG-M8 | IG-M10 | IG-M12 | IG-M16 | IG-M20 |
|---|---|---|---|---|---|---|---|---|
| **Non-cracked concrete under static and quasi-static action for a working life of 50 and 100 years** | | | | | | | | |
| Temperature range I: 40°C/24°C | $\delta_{N0}$-factor | [mm/(N/mm²)] | 0,029 | 0,030 | 0,033 | 0,035 | 0,038 | 0,041 |
| | $\delta_{N\infty}$-factor | [mm/(N/mm²)] | 0,029 | 0,030 | 0,033 | 0,035 | 0,038 | 0,041 |
| Temperature range II: 72°C/50°C | $\delta_{N0}$-factor | [mm/(N/mm²)] | 0,039 | 0,040 | 0,044 | 0,047 | 0,051 | 0,055 |
| | $\delta_{N\infty}$-factor | [mm/(N/mm²)] | 0,049 | 0,051 | 0,055 | 0,059 | 0,064 | 0,070 |
| **Cracked concrete under static and quasi-static action for a working life of 50 and 100 years** | | | | | | | | |
| Temperature range I: 40°C/24°C | $\delta_{N0}$-factor | [mm/(N/mm²)] | 0,071 | 0,072 | 0,074 | 0,076 | 0,079 | 0,082 |
| | $\delta_{N\infty}$-factor | [mm/(N/mm²)] | 0,115 | 0,122 | 0,128 | 0,135 | 0,142 | 0,171 |
| Temperature range II: 72°C/50°C | $\delta_{N0}$-factor | [mm/(N/mm²)] | 0,095 | 0,096 | 0,099 | 0,102 | 0,106 | 0,110 |
| | $\delta_{N\infty}$-factor | [mm/(N/mm²)] | 0,154 | 0,163 | 0,172 | 0,181 | 0,189 | 0,229 |

[1] Calculation of the displacement
$\delta_{N0} = \delta_{N0}\text{-factor} \cdot \tau$; $\tau$: action bond stress for tension
$\delta_{N\infty} = \delta_{N\infty}\text{-factor} \cdot \tau$;

## Table C19: Displacements under tension load[1] in diamond drilled holes (DD)

| Anchor size Internal threaded anchor rod | | | IG-M6 | IG-M8 | IG-M10 | IG-M12 | IG-M16 | IG-M20 |
|---|---|---|---|---|---|---|---|---|
| **Non-cracked concrete under static and quasi-static action for a working life of 50 years** | | | | | | | | |
| Temperature range I: 40°C/24°C | $\delta_{N0}$-factor | [mm/(N/mm²)] | 0,012 | 0,012 | 0,013 | 0,014 | 0,014 | 0,015 |
| | $\delta_{N\infty}$-factor | [mm/(N/mm²)] | 0,019 | 0,019 | 0,020 | 0,022 | 0,023 | 0,025 |
| Temperature range II: 72°C/50°C | $\delta_{N0}$-factor | [mm/(N/mm²)] | 0,014 | 0,014 | 0,015 | 0,016 | 0,016 | 0,018 |
| | $\delta_{N\infty}$-factor | [mm/(N/mm²)] | 0,053 | 0,055 | 0,058 | 0,062 | 0,065 | 0,070 |
| **Non-cracked concrete under static and quasi-static action for a working life of 100 years** | | | | | | | | |
| Temperature range I: 40°C/24°C | $\delta_{N0}$-factor | [mm/(N/mm²)] | 0,012 | 0,012 | 0,013 | 0,014 | 0,014 | 0,015 |
| | $\delta_{N\infty}$-factor | [mm/(N/mm²)] | 0,021 | 0,021 | 0,023 | 0,024 | 0,025 | 0,027 |
| Temperature range II: 72°C/50°C | $\delta_{N0}$-factor | [mm/(N/mm²)] | 0,014 | 0,014 | 0,015 | 0,016 | 0,016 | 0,018 |
| | $\delta_{N\infty}$-factor | [mm/(N/mm²)] | 0,039 | 0,040 | 0,043 | 0,045 | 0,047 | 0,051 |

[1] Calculation of the displacement
$\delta_{N0} = \delta_{N0}\text{-factor} \cdot \tau$; $\tau$: action bond stress for tension
$\delta_{N\infty} = \delta_{N\infty}\text{-factor} \cdot \tau$;

## Table C20: Displacements under shear load[1] for all drilling methods

| Anchor size Internal threaded anchor rod | | | IG-M6 | IG-M8 | IG-M10 | IG-M12 | IG-M16 | IG-M20 |
|---|---|---|---|---|---|---|---|---|
| **Non-cracked and cracked concrete under static and quasi-static action** | | | | | | | | |
| All temperature ranges | $\delta_{V0}$-factor | [mm/kN] | 0,07 | 0,06 | 0,06 | 0,05 | 0,04 | 0,04 |
| | $\delta_{V\infty}$-factor | [mm/kN] | 0,10 | 0,09 | 0,08 | 0,08 | 0,06 | 0,06 |

[1] Calculation of the displacement
$\delta_{V0} = \delta_{V0}\text{-factor} \cdot V$; V: action shear load
$\delta_{V\infty} = \delta_{V\infty}\text{-factor} \cdot V$;

**Injection system EJOT MULTIFIX SE1000 SEISMIC for concrete**

**Performances**
Displacements under static and quasi-static action (Internal threaded anchor rod)

**Annex C 16**

## Table C21: Displacements under tension load[1] in hammer drilled holes (HD), compressed air drilled holes (CD) and with hollow drill bit (HDB)

| Anchor size reinforcing bar | | | Ø 8 | Ø 10 | Ø 12 | Ø 14 | Ø 16 | Ø 20 | Ø 24 | Ø 25 | Ø 28 | Ø 32 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Non-cracked concrete under static and quasi-static action for a working life of 50 and 100 years** | | | | | | | | | | | | |
| Temp.- range I: 40°C/24°C | $\delta_{N0}$-factor | [mm/(N/mm²)] | 0,028 | 0,029 | 0,030 | 0,031 | 0,033 | 0,035 | 0,038 | 0,038 | 0,040 | 0,043 |
| | $\delta_{N\infty}$-factor | [mm/(N/mm²)] | 0,028 | 0,029 | 0,030 | 0,031 | 0,033 | 0,035 | 0,038 | 0,038 | 0,040 | 0,043 |
| Temp.- range II: 72°C/50°C | $\delta_{N0}$-factor | [mm/(N/mm²)] | 0,038 | 0,039 | 0,040 | 0,042 | 0,044 | 0,047 | 0,051 | 0,051 | 0,054 | 0,058 |
| | $\delta_{N\infty}$-factor | [mm/(N/mm²)] | 0,047 | 0,049 | 0,051 | 0,053 | 0,055 | 0,059 | 0,065 | 0,065 | 0,068 | 0,072 |
| **Cracked concrete under static and quasi-static action for a working life of 50 and 100 years** | | | | | | | | | | | | |
| Temp.- range I: 40°C/24°C | $\delta_{N0}$-factor | [mm/(N/mm²)] | 0,069 | 0,071 | 0,072 | 0,073 | 0,074 | 0,076 | 0,079 | 0,079 | 0,081 | 0,084 |
| | $\delta_{N\infty}$-factor | [mm/(N/mm²)] | 0,115 | 0,122 | 0,128 | 0,135 | 0,142 | 0,155 | 0,171 | 0,171 | 0,181 | 0,194 |
| Temp.- range II: 72°C/50°C | $\delta_{N0}$-factor | [mm/(N/mm²)] | 0,092 | 0,095 | 0,096 | 0,098 | 0,099 | 0,102 | 0,106 | 0,106 | 0,109 | 0,113 |
| | $\delta_{N\infty}$-factor | [mm/(N/mm²)] | 0,154 | 0,163 | 0,172 | 0,181 | 0,189 | 0,207 | 0,229 | 0,229 | 0,242 | 0,260 |

[1] Calculation of the displacement

$\delta_{N0} = \delta_{N0}\text{-factor} \cdot \tau$; $\tau$: action bond stress for tension

$\delta_{N\infty} = \delta_{N\infty}\text{-factor} \cdot \tau$;

## Table C22: Displacements under tension load[1] in diamond drilled holes (DD)

| Anchor size reinforcing bar | | | Ø 8 | Ø 10 | Ø 12 | Ø 14 | Ø 16 | Ø 20 | Ø 24 | Ø 25 | Ø 28 | Ø 32 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Non-cracked concrete under static and quasi-static action for a working life of 50 years** | | | | | | | | | | | | |
| Temp.- range I: 40°C/24°C | $\delta_{N0}$-factor | [mm/(N/mm²)] | 0,008 | 0,009 | 0,009 | 0,01 | 0,011 | 0,012 | 0,013 | 0,013 | 0,014 | 0,015 |
| | $\delta_{N\infty}$-factor | [mm/(N/mm²)] | 0,018 | 0,018 | 0,019 | 0,020 | 0,021 | 0,024 | 0,027 | 0,027 | 0,028 | 0,031 |
| Temp.- range II: 72°C/50°C | $\delta_{N0}$-factor | [mm/(N/mm²)] | 0,009 | 0,011 | 0,011 | 0,012 | 0,013 | 0,014 | 0,015 | 0,015 | 0,016 | 0,018 |
| | $\delta_{N\infty}$-factor | [mm/(N/mm²)] | 0,048 | 0,051 | 0,054 | 0,058 | 0,061 | 0,068 | 0,076 | 0,076 | 0,081 | 0,088 |
| **Non-cracked concrete under static and quasi-static action for a working life of 100 years** | | | | | | | | | | | | |
| Temp.- range I: 40°C/24°C | $\delta_{N0}$-factor | [mm/(N/mm²)] | 0,008 | 0,009 | 0,009 | 0,010 | 0,011 | 0,012 | 0,013 | 0,013 | 0,014 | 0,015 |
| | $\delta_{N\infty}$-factor | [mm/(N/mm²)] | 0,018 | 0,020 | 0,021 | 0,022 | 0,024 | 0,026 | 0,029 | 0,029 | 0,031 | 0,034 |
| Temp.- range II: 72°C/50°C | $\delta_{N0}$-factor | [mm/(N/mm²)] | 0,009 | 0,011 | 0,011 | 0,012 | 0,013 | 0,014 | 0,015 | 0,015 | 0,016 | 0,018 |
| | $\delta_{N\infty}$-factor | [mm/(N/mm²)] | 0,035 | 0,037 | 0,040 | 0,042 | 0,045 | 0,049 | 0,055 | 0,055 | 0,059 | 0,064 |

[1] Calculation of the displacement

$\delta_{N0} = \delta_{N0}\text{-factor} \cdot \tau$; $\tau$: action bond stress for tension

$\delta_{N\infty} = \delta_{N\infty}\text{-factor} \cdot \tau$;

## Table C23: Displacements under shear load[1] for all drilling methods

| Anchor size reinforcing bar | | | Ø 8 | Ø 10 | Ø 12 | Ø 14 | Ø 16 | Ø 20 | Ø 24 | Ø 25 | Ø 28 | Ø 32 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Non-cracked and cracked concrete under static and quasi-static action** | | | | | | | | | | | | |
| All temperature ranges | $\delta_{V0}$-factor | [mm/kN] | 0,06 | 0,05 | 0,05 | 0,04 | 0,04 | 0,04 | 0,03 | 0,03 | 0,03 | 0,03 |
| | $\delta_{V\infty}$-factor | [mm/kN] | 0,09 | 0,08 | 0,08 | 0,06 | 0,06 | 0,05 | 0,05 | 0,05 | 0,04 | 0,04 |

[1] Calculation of the displacement

$\delta_{V0} = \delta_{V0}\text{-factor} \cdot V$; V: action shear load

$\delta_{V\infty} = \delta_{V\infty}\text{-factor} \cdot V$;

**Injection system EJOT MULTIFIX SE1000 SEISMIC for concrete**

**Performances**
Displacements under static and quasi-static action (rebar)

**Annex C 17**

## Table C24: Characteristic values of tension loads under seismic action (performance category C1) for a working life of 50 and 100 years

| Anchor size threaded rod | | | | | M8 | M10 | M12 | M16 | M20 | M24 | M27 | M30 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Steel failure** | | | | | | | | | | | | |
| Characteristic tension resistance | | | $N_{Rk,s,eq,C1}$ | [kN] | $1,0 \cdot N_{Rk,s}$ | | | | | | | |
| Partial factor | | | $\gamma_{Ms,N}$ | [-] | see Table C1 | | | | | | | |
| **Combined pull-out and concrete failure** | | | | | | | | | | | | |
| Characteristic bond resistance in cracked and non-cracked concrete C20/25 in hammer drilled holes (HD), compressed air drilled holes (CD) and with hollow drill bit (HDB) | | | | | | | | | | | | |
| Temperature range | I: 40°C/24°C | Dry, wet concrete and flooded bore hole | $\tau_{Rk,eq,C1}$ | [N/mm²] | 7,0 | 7,0 | 8,5 | 8,5 | 8,5 | 8,5 | 8,5 | 8,5 |
| | II: 72°C/50°C | | $\tau_{Rk,eq,C1}$ | [N/mm²] | 6,0 | 6,0 | 7,0 | 7,0 | 7,0 | 7,0 | 7,0 | 7,0 |
| Increasing factors for concrete $\psi_c$ | | | C25/30 to C50/60 | | 1,0 | | | | | | | |
| **Installation factor** | | | | | | | | | | | | |
| for dry and wet concrete (HD; HDB, CD) | | | $\gamma_{inst}$ | [-] | 1,0 | | | | | | | |
| for flooded bore hole (HD; HDB, CD) | | | | | 1,2 | | | | | | | |

## Table C25: Characteristic values of shear loads under seismic action (performance category C1)

| Anchor size threaded rod | | | M8 | M10 | M12 | M16 | M20 | M24 | M27 | M30 |
|---|---|---|---|---|---|---|---|---|---|---|
| **Steel failure** | | | | | | | | | | |
| Characteristic shear resistance (Seismic C1) | $V_{Rk,s,eq,C1}$ | [kN] | $0,70 \cdot V^0_{Rk,c}$ | | | | | | | |
| Partial factor | $\gamma_{Ms,V}$ | [-] | see Table C1 | | | | | | | |
| **Factor for annular gap** | $\alpha_{gap}$ | [-] | 0,5 (1,0)[1] | | | | | | | |

[1] Value in brackets valid for filled annular gab between anchor and clearance hole in the fixture. Use of special filling washer Annex A 3 is recommended.

**Injection system EJOT MULTIFIX SE1000 SEISMIC for concrete**

**Performances**
Characteristic values of tension and shear loads under seismic action (performance category C1) for a working life of 50 and 100 years (threaded rod)

**Annex C 18**

## Table C26: Characteristic values of tension loads under seismic action (performance category C1) for a working life of 50 and 100 years

| Anchor size reinforcing bar | | | | Ø 8 | Ø 10 | Ø 12 | Ø 14 | Ø 16 | Ø 20 | Ø 24 | Ø 25 | Ø 28 | Ø 32 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Steel failure** | | | | | | | | | | | | | |
| Characteristic tension resistance | | $N_{Rk,s,eq,C1}$ | [kN] | $1,0 \cdot A_s \cdot f_{uk}$ [1] | | | | | | | | | |
| Cross section area | | $A_s$ | [mm²] | 50 | 79 | 113 | 154 | 201 | 314 | 452 | 491 | 616 | 804 |
| Partial factor | | $\gamma_{Ms,N}$ | [-] | 1,4 [2] | | | | | | | | | |
| **Combined pull-out and concrete failure** | | | | | | | | | | | | | |
| Characteristic bond resistance in cracked and non-cracked concrete C20/25 in hammer drilled holes (HD), compressed air drilled holes (CD) and with hollow drill bit (HDB) | | | | | | | | | | | | | |
| Temperature range I: 40°C/24°C | Dry, wet concrete and flooded bore hole | $\tau_{Rk,eq,C1}$ | [N/mm²] | 7,0 | 7,0 | 8,5 | 8,5 | 8,5 | 8,5 | 8,5 | 8,5 | 8,5 | 8,5 |
| Temperature range II: 72°C/50°C | Dry, wet concrete and flooded bore hole | $\tau_{Rk,eq,C1}$ | [N/mm²] | 6,0 | 6,0 | 7,0 | 7,0 | 7,0 | 7,0 | 7,0 | 7,0 | 7,0 | 7,0 |
| Increasing factors for concrete $\psi_c$ | | C25/30 to C50/60 | | 1,0 | | | | | | | | | |
| **Installation factor** | | | | | | | | | | | | | |
| for dry and wet concrete (HD; HDB, CD) | | $\gamma_{inst}$ | [-] | 1,0 | | | | | | | | | |
| for flooded bore hole (HD; HDB, CD) | | $\gamma_{inst}$ | [-] | 1,2 | | | | | | | | | |

[1] $f_{uk}$ shall be taken from the specifications of reinforcing bars
[2] in absence of national regulation

## Table C27: Characteristic values of shear loads under seismic action (performance category C1)

| Anchor size reinforcing bar | | | Ø 8 | Ø 10 | Ø 12 | Ø 14 | Ø 16 | Ø 20 | Ø 24 | Ø 25 | Ø 28 | Ø 32 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Steel failure** | | | | | | | | | | | | |
| Characteristic shear resistance | $V_{Rk,s,eq,C1}$ | [kN] | $0,35 \cdot A_s \cdot f_{uk}$ [1] | | | | | | | | | |
| Cross section area | $A_s$ | [mm²] | 50 | 79 | 113 | 154 | 201 | 314 | 452 | 491 | 616 | 804 |
| Partial factor | $\gamma_{Ms,V}$ | [-] | 1,5 [2] | | | | | | | | | |
| **Factor for annular gap** | $\alpha_{gap}$ | [-] | 0,5 (1,0) [3] | | | | | | | | | |

[1] $f_{uk}$ shall be taken from the specifications of reinforcing bars
[2] in absence of national regulation
[3] Value in brackets valid for filled annular gab between anchor and clearance hole in the fixture. Use of special filling washer Annex A 3 is recommended.

**Injection system EJOT MULTIFIX SE1000 SEISMIC for concrete**

**Performances**
Characteristic values of tension and shear loads under seismic action (performance category C1) for a working life of 50 and 100 years (rebar)

**Annex C 19**

## Table C28: Characteristic values of tension loads under seismic action (performance category C2) for a working life of 50 and 100 years

| Anchor size threaded rod | | | | M12 | M16 | M20 | M24 |
|---|---|---|---|---|---|---|---|
| **Steel failure** | | | | | | | |
| Characteristic tension resistance, Steel, strength class 8.8 Stainless Steel A4 and HCR, Strength class ≥70 | | $N_{Rk,s,eq,C2}$ | [kN] | $1,0 \cdot N_{Rk,s}$ | | | |
| Partial factor | | $\gamma_{Ms,N}$ | [-] | see Table C1 | | | |
| **Combined pull-out and concrete failure** | | | | | | | |
| Characteristic bond resistance in cracked and non-cracked concrete C20/25 in hammer drilled holes (HD), compressed air drilled holes (CD) and with hollow drill bit (HDB) | | | | | | | |
| Temperature range I: 40°C/24°C | Dry, wet concrete and flooded bore hole | $\tau_{Rk,eq,C2}$ | [N/mm²] | 5,8 | 4,8 | 5,0 | 5,1 |
| Temperature range II: 72°C/50°C | Dry, wet concrete and flooded bore hole | $\tau_{Rk,eq,C2}$ | [N/mm²] | 5,0 | 4,1 | 4,3 | 4,4 |
| Increasing factors for concrete $\psi_c$ | | C25/30 to C50/60 | | 1,0 | | | |
| **Installation factor** | | | | | | | |
| for dry and wet concrete (HD; HDB, CD) | | $\gamma_{inst}$ | [-] | 1,0 | | | |
| for flooded bore hole (HD; HDB, CD) | | $\gamma_{inst}$ | [-] | 1,2 | | | |

## Table C29: Characteristic values of shear loads under seismic action (performance category C2)

| Anchor size threaded rod | | | M12 | M16 | M20 | M24 |
|---|---|---|---|---|---|---|
| **Steel failure** | | | | | | |
| Characteristic shear resistance Steel, strength class 8.8 Stainless Steel A4 and HCR, Strength class ≥70 | $V_{Rk,s,eq,C2}$ | [kN] | $0,70 \cdot V^0_{Rk,s}$ | | | |
| Partial factor | $\gamma_{Ms,V}$ | [-] | see Table C1 | | | |
| **Factor for annular gap** | $\alpha_{gap}$ | [-] | 0,5 (1,0)[1] | | | |

[1] Value in brackets valid for filled annular gab between anchor and clearance hole in the fixture. Use of special filling washer Annex A 3 is recommended.

**Injection system EJOT MULTIFIX SE1000 SEISMIC for concrete**

**Performances**
Characteristic values of tension and shear loads under seismic action (performance category C2) for a working life of 50 and 100 years (threaded rod)

**Annex C 20**

## Table C30: Displacements under tension load (threaded rod)

| Anchor size threaded rod | | | M12 | M16 | M20 | M24 |
|---|---|---|---|---|---|---|
| **Non-cracked and cracked concrete under seismic action (performance category C2)** | | | | | | |
| All temperature ranges | $\delta_{N,eq,C2(DLS)}$ | [mm] | 0,21 | 0,24 | 0,27 | 0,36 |
| | $\delta_{N,eq,C2(ULS)}$ | [mm] | 0,54 | 0,51 | 0,54 | 0,63 |

## Table C31: Displacements under shear load (threaded rod)

| Anchor size threaded rod | | | M12 | M16 | M20 | M24 |
|---|---|---|---|---|---|---|
| **Non-cracked and cracked concrete under seismic action (performance category C2)** | | | | | | |
| All temperature ranges | $\delta_{V,eq,C2(DLS)}$ | [mm] | 3,1 | 3,4 | 3,5 | 4,2 |
| | $\delta_{V,eq,C2(ULS)}$ | [mm] | 6,0 | 7,6 | 7,3 | 10,9 |