



**TECHNICKÝ A ZKUŠEBNÍ ÚSTAV STAVEBNÍ PRAHA, s.p.**  
**Technical and Test Institute for Construction Prague, SOE**

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Notified Body 1020

## **CERTIFICATE OF CONSTANCY OF PERFORMANCE**

No. 1020 – CPR – 090-042479

In compliance with Regulation (EU) No 305/2011 of the European Parliament and of the Council of 9 March 2011 (the Construction Products Regulation or CPR), this certificate applies to the construction product:

### **J-fix Polyester Resin Styrene free**

**Bonded injection type anchor for use in uncracked concrete**

placed on the market under the name or trade mark of

### **Hexstone Ltd. T/A JCP Construction Products**

Opal Way, Stone Business Park, Stone, Staffordshire, ST15 0SW, United Kingdom

and produced in the manufacturing plant:

### **Plant 1**

This certificate attests that all provisions concerning the assessment and verification of constancy of performance described in the

**ETA 13/0782, issued on 26/09/2018**

and

**EAD 330499-00-0601**

under system 1 for the performance set out in the ETA are applied and that the factory production control conducted by manufacturer is assessed to ensure the

**constancy of performance of the construction product.**

This certificate was first issued on 12<sup>th</sup> October 2018 and will remain valid as long as neither the ETA, the EAD, the construction product, the AVCP methods nor the manufacturing conditions in the plant are modified significantly, unless suspended or withdrawn by the notified product certification body.



The stamp of the Notified Body 1020

Prague, 12<sup>th</sup> October, 2018

Ing. Jozef Pöbiš  
Manager of the Notified Body

Supplied By

**FFT**

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www.eota.eu

## European Technical Assessment

## ETA 13/0782 of 26/09/2018

**Technical Assessment Body issuing the ETA:** Technical and Test Institute  
for Construction Prague

**Trade name of the construction product**

J-fix Polyester Resin Styrene free

**Product family to which the construction  
product belongs**

Product area code: 33  
Bonded injection type anchor for use  
in uncracked concrete

**Manufacturer**

Hexstone Ltd. T/A JCP Construction Products  
Opal Way, Stone Business Park,  
Stone, Staffordshire, ST15 0SW,  
United Kingdom

**Manufacturing plant**

Plant 1

**This European Technical Assessment  
contains**

13 pages including 10 Annexes which form  
an integral part of this assessment

**This European Technical Assessment is  
issued in accordance with regulation  
(EU) No 305/2011, on the basis of**

EAD 330499-00-0601

**This version replaces**

ETA 13/0782 issued on 25/06/2013

Translations of this European Technical Assessment in other languages shall fully correspond to the original issued document and should be identified as such.

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## 1. Technical description of the product

The J-fix Polyester Resin Styrene free with steel elements is bonded anchor (injection type). Steel elements can be galvanized or stainless steel.

Steel element is placed into a drilled hole filled with injection mortar. The steel element is anchored via the bond between metal part, injection mortar and concrete. The anchor is intended to be used with embedment depth from 8 diameters to 12 diameters.

The illustration and the description of the product are given in Annex A.

## 2. Specification of the intended use in accordance with the applicable EAD

The performances given in Section 3 are only valid if the anchor is used in compliance with the specifications and conditions given in Annex B.

The provisions made in this European Technical Assessment are based on an assumed working life of the anchor of 50 years. The indications given on the working life cannot be interpreted as a guarantee given by the producer, but are to be regarded only as a means for choosing the products in relation to the expected economically reasonable working life of the works.

## 3. Performance of the product and references to the methods used for its assessment

### 3.1 Mechanical resistance and stability (BWR 1)

Essential characteristic	Performance
Resistance to steel failure (tension)	See Annex C1
Resistance to combined pull-out and concrete failure	See Annex C1
Resistance to concrete cone failure	See Annex C1
Edge distance to prevent splitting under load	See Annex C1
Robustness	See Annex C1
Maximum setting torque moment	See Annex B4
Minimum edge distance and spacing	See Annex B4
Resistance to steel failure (shear)	See Annex C2
Resistance to pry-out failure	See Annex C2
Resistance to concrete edge failure	See Annex C2
Displacements under short term and long term loading	See Annex C3
Durability of metal parts	See Annex A3

### 3.2 Hygiene, health and environment (BWR 3)

No performance determined.

### 3.3 General aspects relating to fitness for use

Durability and serviceability are only ensured if the specifications of intended use according to Annex B 1 are kept.

## 4. Assessment and verification of constancy of performance (AVCP) system applied with reference to its legal base

According to the Decision 96/582/EC of the European Commission<sup>1</sup> the system of assessment verification of constancy of performance (see Annex V to Regulation (EU) No 305/2011) given in the following table apply.

Product	Intended use	Level or class	System
Metal anchors for use in concrete	For fixing and/or supporting to concrete, structural elements (which contributes to the stability of the works) or heavy units.	-	1

<sup>1</sup> Official Journal of the European Communities L 254 of 08.10.1996

**5. Technical details necessary for the implementation of the AVCP system, as provided in the applicable EAD**

**5.1 Tasks of the manufacturer**

The manufacturer may only use raw materials stated in the technical documentation of this European Technical Assessment.

The factory production control shall be in accordance with the control plan which is a part of the technical documentation of this European Technical Assessment. The control plan is laid down in the context of the factory production control system operated by the manufacturer and deposited at Technický a zkušební ústav stavební Praha, s.p.<sup>2</sup> The results of factory production control shall be recorded and evaluated in accordance with the provisions of the control plan.

**5.2 Tasks of the notified bodies**

The notified body shall retain the essential points of its actions referred to above and state the results obtained and conclusions drawn in a written report.

The notified certification body involved by the manufacturer shall issue an certificate of constancy of performance of the product stating the conformity with the provisions of this European Technical Assessment.

In cases where the provisions of the European Technical Assessment and its control plan are no longer fulfilled the notified body shall withdraw the certificate of constancy of performance and inform Technical and Test Institute for Construction Prague without delay.

Issued in Prague on 26.09.2018

By

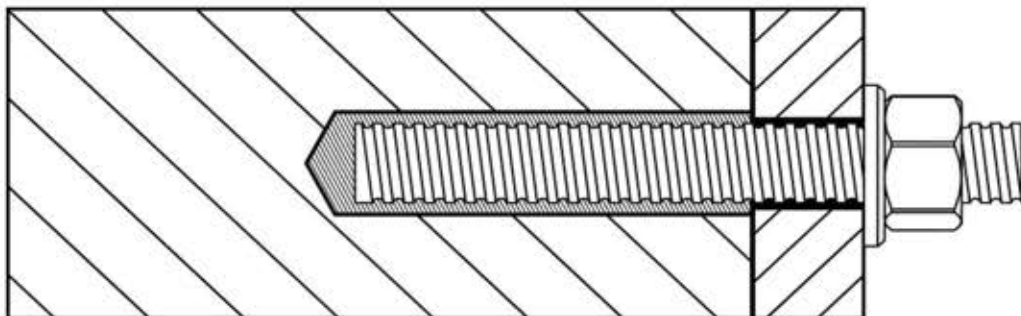
**Ing. Mária Schaan**

Head of the Technical Assessment Body

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<sup>2</sup> The control plan is a confidential part of the documentation of the European Technical Assessment, but not published together with the ETA and only handed over to the approved body involved in the procedure of AVCP.

**Threaded rod**



**J-fix Polyester Resin Styrene free**

**Product description**  
Installed conditions

**Annex A 1**

**Coaxial cartridge**

J-fix Polyester Resin Styrene free

150 ml

380 ml

400 ml

410 ml

**Side by side cartridge**

J-fix Polyester Resin Styrene free

350 ml

**Two part foil in a single piston component cartridge**

J-fix Polyester Resin Styrene free

150 ml

170 ml

300 ml

**Marking of the mortar cartridges**

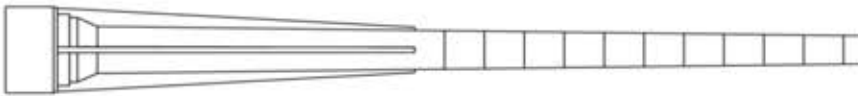
Identifying mark of the producer, Trade name, Charge code number, Storage life, Curing and processing time

**Mixing nozzle**

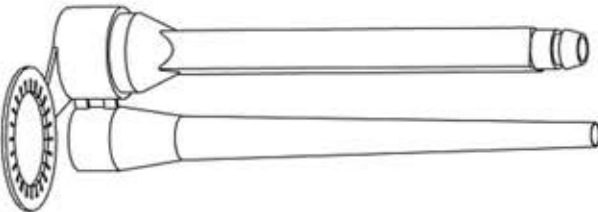
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RC



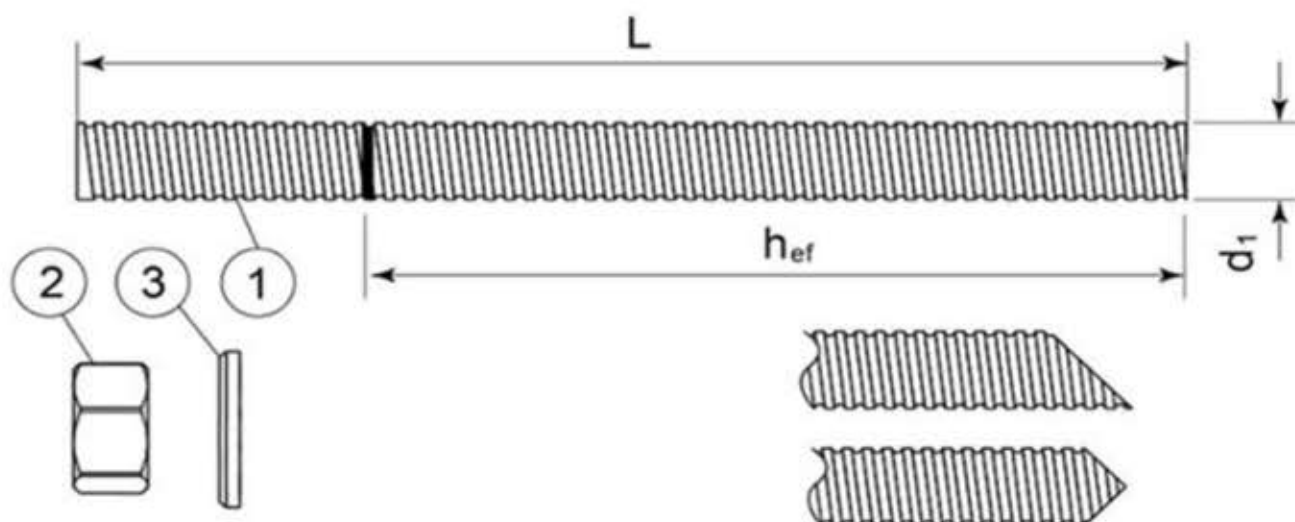
RM

**J-fix Polyester Resin Styrene free****Product description**

Injection system

**Annex A 2**

## Threaded rod M8, M10, M12, M16, M20, M24



Standard commercial threaded rod with marked embedment depth

Part	Designation	Material
<b>Steel, zinc plated <math>\geq 5 \mu\text{m}</math> acc. to EN ISO 4042 or Steel, Hot-dip galvanized <math>\geq 40 \mu\text{m}</math> acc. to EN ISO 1461 and EN ISO 10684 or Steel, zinc diffusion coating <math>\geq 15 \mu\text{m}</math> acc. to EN 13811</b>		
1	Anchor rod	Steel, EN 10087 or EN 10263 Property class 5.8, 8.8, 10.9* EN ISO 898-1
2	Hexagon nut EN ISO 4032	According to threaded rod, EN 20898-2
3	Washer EN ISO 887, EN ISO 7089, EN ISO 7093 or EN ISO 7094	According to threaded rod
<b>Stainless steel</b>		
1	Anchor rod	Material: A2-70, A4-70, A4-80, EN ISO 3506
2	Hexagon nut EN ISO 4032	According to threaded rod
3	Washer EN ISO 887, EN ISO 7089, EN ISO 7093 or EN ISO 7094	According to threaded rod
<b>High corrosion resistant steel</b>		
1	Anchor rod	Material: 1.4529, 1.4565, EN 10088-1
2	Hexagon nut EN ISO 4032	According to threaded rod
3	Washer EN ISO 887, EN ISO 7089, EN ISO 7093 or EN ISO 7094	According to threaded rod

\*Galvanized rod of high strength are sensitive to hydrogen induced brittle failure

**J-fix Polyester Resin Styrene free**

**Product description**  
Threaded rod and materials

**Annex A 3**

## Specifications of intended use

### Anchorage subject to:

- Static and quasi-static load.

### Base materials

- Uncracked concrete.
- Reinforced or unreinforced normal weight concrete of strength class C20/25 at minimum and C50/60 at maximum according EN 206-1:2000-12.

### Temperature range:

- -40°C to +80°C (max. short. term temperature +80°C and max. long term temperature +50°C)

### Use conditions (Environmental conditions)

- (X1) Structures subject to dry internal conditions (zinc coated steel, stainless steel, high corrosion resistance steel).
- (X2) Structures subject to external atmospheric exposure (including industrial and marine environment) and to permanently damp internal condition, if no particular aggressive conditions exist (stainless steel A4, high corrosion resistant steel).
- (X3) Structures subject to external atmospheric exposure and to permanently damp internal condition, if other particular aggressive conditions exist (high corrosion resistant steel).

Note: Particular aggressive conditions are e.g. permanent, alternating immersion in seawater or the splash zone of seawater, chloride atmosphere of indoor swimming pools or atmosphere with extreme chemical pollution (e.g. in desulphurization plants or road tunnels where de-icing materials are used).

### Concrete conditions:

- I1 – installation in dry or wet (water saturated) concrete or flooded hole.
- I2 – installation in water-filled (not sea water) and use in service in dry or wet concrete

### Design:

- The anchorages are designed in accordance with the EN 1992-4 or EOTA Technical Report TR 055 under the responsibility of an engineer experienced in anchorages and concrete work.
- Verifiable calculation notes and drawings are prepared taking account of the loads to be anchored. The position of the anchor is indicated on the design drawings.

### Installation:

- Hole drilling by hammer drill mode.
- Anchor installation carried out by appropriately qualified personnel and under the supervision of the person responsible for technical matters of the site.

### Installation direction:

- D3 – downward and horizontal and upwards (e.g. overhead) installation

J-fix Polyester Resin Styrene free

Intended use  
Specifications

Annex B 1



**Applicator gun**

**A**



**B**



**C**



**D**

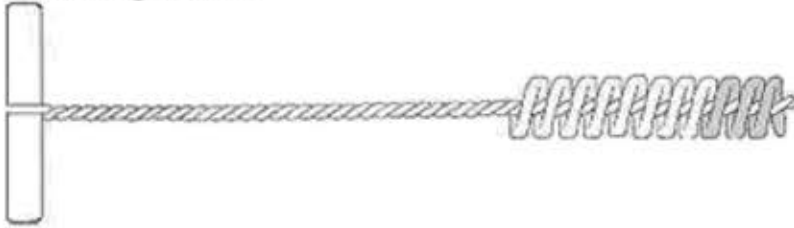


**E**



Applicator gun	A	B	C	D	E
Cartridge	Coaxial 380ml 400ml 410ml	Side by side 350ml	Foil capsule 150ml 300ml	Foil capsule 150ml 300ml	Coaxial 150ml

**Cleaning brush**



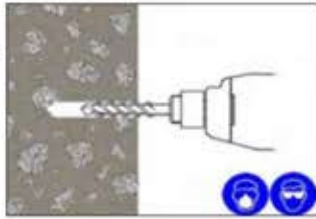
**J-fix Polyester Resin Styrene free**

**Intended use**  
Applicator guns  
Cleaning brush

**Annex B 2**

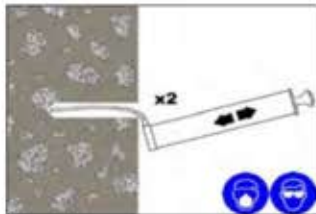
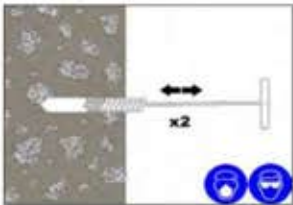
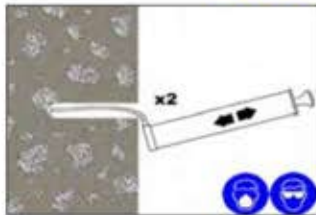
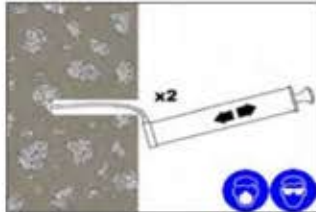
# Installation procedure

1. Drill the hole to the correct diameter and depth. This can be done with either a rotary percussion or rotary hammer drilling machine depending upon the substrate.



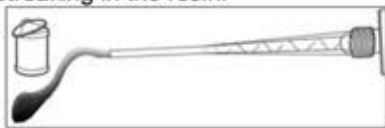
2. Thoroughly clean the hole in the following sequence using the brush with the required extensions and a blow pump.

**Blow Clean x2.**  
**Brush Clean x2.**  
**Blow Clean x2.**  
**Brush Clean x2.**  
**Blow Clean x2.**



**If the hole collects water after the initial cleaning this water must be removed before injecting the resin.**

3. Select the appropriate static mixer nozzle for the installation, open the cartridge/foil and screw onto the mouth of the cartridge. Insert the cartridge into the correct applicator gun.  
 4. Extrude the first part of the cartridge to waste until an even colour has been achieved without streaking in the resin.



5. If necessary, cut the extension tube to the depth of the hole and push onto the end of the mixer nozzle, and (for threaded bar 16mm dia. or more) fit the correct resin stopper to the other end. Attach extension tubing and resin stopper.



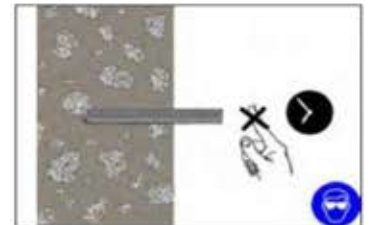
6. Insert the mixer nozzle (resin stopper / extension tube if applicable) to the bottom of the hole. Begin to extrude the resin and slowly withdraw the mixer nozzle from the hole ensuring that there are no air voids as the mixer nozzle is withdrawn. Fill the hole to approximately 1/2 to 3/4 full and remove the mixer nozzle completely.

7. Insert the clean threaded bar, free from oil or other release agents, to the bottom of the hole using a back and forth twisting motion ensuring all the threads are thoroughly coated. Adjust to the correct position within the stated working time.

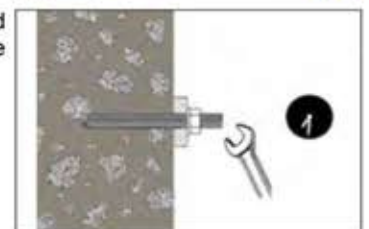


8. Any excess resin should be expelled from the hole evenly around the steel element showing that the hole is full. This excess resin should be removed from around the mouth of the hole before it sets.

9. Leave the anchor to cure. Do not disturb the anchor until the appropriate loading/curing time has elapsed depending on the substrate conditions and ambient temperature.



10 Attach the fixture and tighten the nut to the recommended torque. **Do not overtighten.**



J-fix Polyester Resin Styrene free

Intended use  
 Installation procedure

Annex B 3

**Table B1: Installation parameter**

Size			M8	M10	M12	M16	M20	M24	
Nominal drill hole diameter	$\varnothing d_0$	[mm]	10	12	14	18	22	26	
Diameter of cleaning brush	$d_b$	[mm]	14	14	20	20	29	29	
Torque moment	$\max T_{fix}$	[Nm]	10	20	40	80	150	200	
Depth of drill hole for $h_{ef,min}$	$h_0 = h_{ef}$	[mm]	64	80	96	128	160	192	
Depth of drill hole for $h_{ef,max}$	$h_0 = h_{ef}$	[mm]	96	120	144	192	240	288	
Minimum edge distance	$c_{min}$	[mm]	35	40	50	65	80	96	
Minimum spacing	$s_{min}$	[mm]	35	40	50	65	80	96	
Minimum thickness of member	$h_{min}$	[mm]	$h_{ef} + 30 \text{ mm} \geq 100 \text{ mm}$				$h_{ef} + 2d_0$		

**Table B2: Cleaning**

All diameters
- 2 x blowing
- 2 x brushing
- 2 x blowing
- 2 x brushing
- 2 x blowing

**Table B3: Minimum curing time**

Resin cartridge temperature [°C]	T Work [mins]	Base material Temperature [°C]	T Load [mins]
min +5	18	min +5	145
+5 to +10	10	+5 to +10	
+10 to +20	6	+10 to +20	85
+20 to +25	5	+20 to +25	50
+25 to +30	4	+25 to +30	40
+30		+30	35

T work is typical gel time at highest temperature

T load is set at the lowest temperature

**J-fix Polyester Resin Styrene free****Intended use**

Installation parameters

Curing time

**Annex B 4**

**Table C1: Design method EN 1992-4**  
Characteristic values of resistance to tension load

<b>Steel failure – Characteristic resistance</b>									
<b>Size</b>			<b>M8</b>	<b>M10</b>	<b>M12</b>	<b>M16</b>	<b>M20</b>	<b>M24</b>	
Steel grade 5.8	$N_{Rk,s}$	[kN]	18	29	42	79	123	177	
Partial safety factor	$\gamma_{Ms}$	[-]	1,5						
Steel grade 8.8	$N_{Rk,s}$	[kN]	29	46	67	126	196	282	
Partial safety factor	$\gamma_{Ms}$	[-]	1,5						
Steel grade 10.9	$N_{Rk,s}$	[kN]	37	58	84	157	245	353	
Partial safety factor	$\gamma_{Ms}$	[-]	1,4						
Stainless steel grade A2-70, A4-70	$N_{Rk,s}$	[kN]	26	41	59	110	172	247	
Partial safety factor	$\gamma_{Ms}$	[-]	1,9						
Stainless steel grade A4-80	$N_{Rk,s}$	[kN]	29	46	67	126	196	282	
Partial safety factor	$\gamma_{Ms}$	[-]	1,6						
Stainless steel grade 1.4529	$N_{Rk,s}$	[kN]	26	41	59	110	172	247	
Partial safety factor	$\gamma_{Ms}$	[-]	1,5						
Stainless steel grade 1.4565	$N_{Rk,s}$	[kN]	26	41	59	110	172	247	
Partial safety factor	$\gamma_{Ms}$	[-]	1,9						

<b>Combined pullout and concrete cone failure in uncracked concrete C20/25</b>								
<b>Size</b>			<b>M8</b>	<b>M10</b>	<b>M12</b>	<b>M16</b>	<b>M20</b>	<b>M24</b>
<b>Characteristic bond resistance in uncracked concrete</b>								
Dry/wet concrete and flooded hole	$\tau_{Rk,ucr}$	[N/mm <sup>2</sup> ]	8,5	8	9	9	8	7,5
Installation safety factor	$\gamma_2^{(1)} = \gamma_{inst}^{(2)}$	[-]	1,2					
Factor for concrete	C30/37	$\psi_c$	[-]	1,12				
	C35/45			1,19				
	C50/60			1,30				

<b>Concrete cone failure</b>							
Factor for concrete cone failure	$\frac{k_1^{(1)}}{k_{ucr,N}^{(2)}}$	[-]	10,1				
Edge distance	$c_{cr,N}$	[mm]	1,5h <sub>ef</sub>				

<b>Splitting failure</b>								
<b>Size</b>			<b>M8</b>	<b>M10</b>	<b>M12</b>	<b>M16</b>	<b>M20</b>	<b>M24</b>
Edge distance	$c_{cr,sp}$	[mm]	2,0h <sub>ef</sub>			1,5h <sub>ef</sub>		
Spacing	$s_{cr,sp}$	[mm]	4,0h <sub>ef</sub>			3,0h <sub>ef</sub>		
Partial safety factor	$\gamma_{Msp}$	[-]	1,8					

<sup>1)</sup> Design according EOTA Technical Report TR 055

<sup>2)</sup> Design according EN 1992-4:2016

**J-fix Polyester Resin Styrene free**

**Performances**  
Characteristic resistance for tension loads

**Annex C 1**

**Table C2:** Design method EN 1992-4  
Characteristic values of resistance to shear load

<b>Steel failure without lever arm</b>			<b>M8</b>	<b>M10</b>	<b>M12</b>	<b>M16</b>	<b>M20</b>	<b>M24</b>
<b>Size</b>								
Steel grade <b>5.8</b>	$V_{Rk,s}$	[kN]	9	15	21	39	61	88
Partial safety factor	$\gamma_{Ms}$	[-]	1,25					
Steel grade <b>8.8</b>	$V_{Rk,s}$	[kN]	15	23	34	63	98	141
Partial safety factor	$\gamma_{Ms}$	[-]	1,25					
Steel grade <b>10.9</b>	$V_{Rk,s}$	[kN]	18	29	42	79	123	177
Partial safety factor	$\gamma_{Ms}$	[-]	1,5					
Stainless steel grade <b>A2-70, A4-70</b>	$V_{Rk,s}$	[kN]	13	20	30	55	86	124
Partial safety factor	$\gamma_{Ms}$	[-]	1,56					
Stainless steel grade <b>A4-80</b>	$V_{Rk,s}$	[kN]	15	23	34	63	98	141
Partial safety factor	$\gamma_{Ms}$	[-]	1,33					
Stainless steel grade <b>1.4529</b>	$V_{Rk,s}$	[kN]	13	20	30	55	86	124
Partial safety factor	$\gamma_{Ms}$	[-]	1,25					
Stainless steel grade <b>1.4565</b>	$V_{Rk,s}$	[kN]	13	20	30	55	86	124
Partial safety factor	$\gamma_{Ms}$	[-]	1,56					
<b>Characteristic resistance of group of fasteners</b>								
Ductility factor $k_7 = 1,0$ for steel with rupture elongation $A_5 > 8\%$								

<b>Steel failure with lever arm</b>			<b>M8</b>	<b>M10</b>	<b>M12</b>	<b>M16</b>	<b>M20</b>	<b>M24</b>
<b>Size</b>								
Steel grade <b>5.8</b>	$M^o_{Rk,s}$	[N.m]	19	37	66	166	325	561
Partial safety factor	$\gamma_{Ms}$	[-]	1,25					
Steel grade <b>8.8</b>	$M^o_{Rk,s}$	[N.m]	30	60	105	266	519	898
Partial safety factor	$\gamma_{Ms}$	[-]	1,25					
Steel grade <b>10.9</b>	$M^o_{Rk,s}$	[N.m]	37	75	131	333	649	1123
Partial safety factor	$\gamma_{Ms}$	[-]	1,50					
Stainless steel grade <b>A2-70, A4-70</b>	$M^o_{Rk,s}$	[N.m]	26	52	92	233	454	786
Partial safety factor	$\gamma_{Ms}$	[-]	1,56					
Stainless steel grade <b>A4-80</b>	$M^o_{Rk,s}$	[N.m]	30	60	105	266	519	898
Partial safety factor	$\gamma_{Ms}$	[-]	1,33					
Stainless steel grade <b>1.4529</b>	$M^o_{Rk,s}$	[N.m]	26	52	92	233	454	786
Partial safety factor	$\gamma_{Ms}$	[-]	1,25					
Stainless steel grade <b>1.4565</b>	$M^o_{Rk,s}$	[N.m]	26	52	92	233	454	786
Partial safety factor	$\gamma_{Ms}$	[-]	1,56					
<b>Concrete pry-out failure</b>								
Factor for resistance to pry-out failure	$k_8$	[-]	2					

<b>Concrete edge failure</b>			<b>M8</b>	<b>M10</b>	<b>M12</b>	<b>M16</b>	<b>M20</b>	<b>M24</b>
<b>Size</b>								
Outside diameter of fastener	$d_{nom}$	[mm]	8	10	12	16	20	24
Effective length of fastener	$l_f$	[mm]	min ( $h_{ef}$ , $8 d_{nom}$ )					

**J-fix Polyester Resin Styrene free**

**Performances**  
Characteristic resistance for shear loads

**Annex C 2**

**Table C3: Displacement under tension and shear load**

Anchor size			M8	M10	M12	M16	M20	M24
Tension load	F	[kN]	6,3	7,9	11,9	23,8	29,8	45,6
Displacement	$\delta_{N0}$	[mm]	0,2	0,2	0,3	0,5	0,7	0,9
	$\delta_{N\infty}$	[mm]	0,4	0,4	0,4	0,4	0,4	0,4
Shear load	F	[kN]	5,2	8,3	12,0	22,4	35,0	50,4
Displacement	$\delta_{V0}$	[mm]	0,1	0,1	0,2	0,4	0,8	1,5
	$\delta_{V\infty}$	[mm]	0,2	0,2	0,3	0,6	1,2	2,3

**J-fix Polyester Resin Styrene free**

**Performances**  
Displacement

**Annex C 3**



**SAFETY DATA SHEET**  
**Polyester Injection Resin**  
**Styrene Free**  
**Part A**

**SECTION 1: Identification of the substance/mixture and of the company/undertaking**

**1.1. Product identifier**

**Product name** Polyester Injection Resin, Styrene Free  
**Product number** JF150P and JFEA300SF and JF380PSF

**1.2. Relevant identified uses of the substance or mixture and uses advised against**

**Identified uses** Resin.

**1.3. Details of the supplier of the safety data sheet**

**Supplier** JCP Construction Products  
 Unit 14 Teddington Business Park Station Rd  
 Teddington TW11 9BQ  
 Tel +44 208 943 1800  
 Fax +44 208 943 1140

**Web** [www.jcpfixings.co.uk](http://www.jcpfixings.co.uk)

**Contact person** [jcpenquiries@owlett-jaton.com](mailto:jcpenquiries@owlett-jaton.com)

**1.4. Emergency telephone number**

**Emergency telephone** Tel +44 208 943 1800 Monday to Friday 9.00 to 5.00

**SECTION 2: Hazards identification**

**2.1. Classification of the substance or mixture**

**Classification (EC 1272/2008)**

**Physical hazards** Flam. Liq. 3 - H226  
**Health hazards** Skin Irrit. 2 - H315 Eye Irrit. 2 - H319  
**Environmental hazards** Not Classified

**2.2. Label elements**

**Pictogram**



**Signal word** Warning

**Hazard statements** H226 Flammable liquid and vapour.  
 H315 Causes skin irritation.  
 H319 Causes serious eye irritation.

Supplied By

**FFT**  
 Fasteners, Fixings & Tools

☎ 01234 333949  
 FAX- 01234 211069  
 ✉ [info@fasteners-ft.co.uk](mailto:info@fasteners-ft.co.uk)  
[www.fastenersfixingsandtools.co.uk](http://www.fastenersfixingsandtools.co.uk)

## Polyester Injection Resin Styrene Free

<b>Precautionary statements</b>	<p>P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.</p> <p>P302+P352 IF ON SKIN: Wash with plenty of water.</p> <p>P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.</p> <p>P332+P313 If skin irritation occurs: Get medical advice/ attention.</p> <p>P337+P313 If eye irritation persists: Get medical advice/ attention.</p> <p>P403+P235 Store in a well-ventilated place. Keep cool.</p>
<b>Supplementary precautionary statements</b>	<p>P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.</p> <p>P264 Wash contaminated skin thoroughly after handling.</p> <p>P362+P364 Take off contaminated clothing and wash it before reuse.</p> <p>P370+P378 In case of fire: Use foam, carbon dioxide, dry powder or water fog to extinguish.</p> <p>P501 Dispose of contents/ container in accordance with national regulations.</p>

### 2.3. Other hazards

## SECTION 3 Composition/information on ingredients

### 3.2. Mixtures

<b>VINYL TOLUENE</b>	<b>10-20%</b>
CAS number: 25013-15-4	EC number: 246-562-2
	REACH registration number: 01-2119622074-50-XXXX
<b>Classification</b>	
Flam. Liq. 3 - H226	
Acute Tox. 4 - H332	
Skin Irrit. 2 - H315	
Eye Irrit. 2 - H319	
Asp. Tox. 1 - H304	

The Full Text for all R-Phrases and Hazard Statements are Displayed in Section 16.

## SECTION 4 First aid measures

### 4.1. Description of first aid measures

<b>Inhalation</b>	Move affected person to fresh air at once. Get medical attention if any discomfort continues.
<b>Ingestion</b>	Never give anything by mouth to an unconscious person. Do not induce vomiting. Rinse mouth thoroughly with water. Get medical attention if any discomfort continues.
<b>Skin contact</b>	Remove affected person from source of contamination. Remove contaminated clothing. Wash skin thoroughly with soap and water. Get medical attention if any discomfort continues.
<b>Eye contact</b>	Rinse immediately with plenty of water. Remove any contact lenses and open eyelids wide apart. Continue to rinse for at least 15 minutes. Get medical attention if irritation persists after washing. Show this Safety Data Sheet to the medical personnel.

### 4.2. Most important symptoms and effects, both acute and delayed

<b>Inhalation</b>	Irritation of nose, throat and airway.
<b>Ingestion</b>	May cause discomfort if swallowed.
<b>Skin contact</b>	May cause skin irritation/eczema.
<b>Eye contact</b>	Irritation of eyes and mucous membranes.

### 4.3. Indication of any immediate medical attention and special treatment needed



## Polyester Injection Resin Styrene Free

### Notes for the doctor

No specific recommendations. If in doubt, get medical attention promptly.

### SECTION 5 Firefighting measures

#### 5.1. Extinguishing media

**Suitable extinguishing media** Extinguish with foam, carbon dioxide or dry powder.

#### 5.2. Special hazards arising from the substance or mixture

**Specific hazards** No unusual fire or explosion hazards noted.

**Hazardous combustion products** Oxides of carbon.

#### 5.3. Advice for firefighters

**Protective actions during firefighting** Avoid breathing fire gases or vapours.

**Special protective equipment for firefighters** Wear positive-pressure self-contained breathing apparatus (SCBA) and appropriate protective clothing.

### SECTION 6 Accidental release measures

#### 6.1. Personal precautions, protective equipment and emergency procedures

**Personal precautions** Wear protective clothing as described in Section 8 of this safety data sheet.

#### 6.2. Environmental precautions

**Environmental precautions** Avoid release to the environment.

#### 6.3. Methods and material for containment and cleaning up

**Methods for cleaning up** Collect and place in suitable waste disposal containers and seal securely. For waste disposal, see Section 13.

#### 6.4. Reference to other sections

**Reference to other sections** Wear protective clothing as described in Section 8 of this safety data sheet. For waste disposal, see Section 13.

### SECTION 7 Handling and storage

#### 7.1. Precautions for safe handling

**Usage precautions** Do not use in confined spaces without adequate ventilation and/or respirator.

#### 7.2. Conditions for safe storage, including any incompatibilities

**Storage precautions** Store in tightly closed original container in a dry, cool and well-ventilated place. Keep away from oxidising materials, heat and flames.

**Storage class** Chemical storage.

#### 7.3. Specific end use(s)

**Specific end use(s)** The identified uses for this product are detailed in Section 1.2.

### SECTION 8 Exposure Controls/personal protection

#### 8.1. Control parameters

VINYL TOLUENE (CAS: 25013-15-4)

## Polyester Injection Resin Styrene Free

<b>DNEL</b>	Industry - Inhalation; Long term systemic effects: 37 mg/m <sup>3</sup> Industry - Inhalation; Long term local effects: 37 mg/m <sup>3</sup> REACH dossier information
<b>PNEC</b>	- Fresh water; 0.0498 mg/l - Marine water; 0.002 mg/l - Intermittent release; 0.013 mg/l - STP; 1 mg/l - Sediment (Freshwater); 0.684 mg/kg - Sediment (Marinewater); 0.0684 mg/kg - Soil; 0.133 mg/kg REACH dossier information

### 8.2. Exposure controls

#### Protective equipment



#### Appropriate engineering controls

Provide adequate ventilation. Avoid inhalation of vapours. Observe any occupational exposure limits for the product or ingredients.

#### Eye/face protection

The following protection should be worn: Chemical splash goggles.

#### Hand protection

It is recommended that chemical-resistant, impervious gloves are worn.

#### Other skin and body protection

Wear appropriate clothing to prevent any possibility of skin contact.

#### Hygiene measures

DO NOT SMOKE IN WORK AREA! Wash hands at the end of each work shift and before eating, smoking and using the toilet. Wash promptly if skin becomes contaminated. Promptly remove any clothing that becomes contaminated. Use appropriate skin cream to prevent drying of skin. When using do not eat, drink or smoke.

#### Respiratory protection

No specific recommendations. Respiratory protection may be required if excessive airborne contamination occurs.

#### Environmental exposure controls

Keep container tightly sealed when not in use.

## SECTION 9. Physical and Chemical Properties

### 9.1. Information on basic physical and chemical properties

<b>Appearance</b>	Liquid
<b>Colour</b>	Beige.
<b>Odour</b>	Aromatic.
<b>Odour threshold</b>	Not determined.
<b>pH</b>	Not applicable.
<b>Melting point</b>	Not determined.
<b>Initial boiling point and range</b>	>165°C @
<b>Flash point</b>	53°C
<b>Evaporation rate</b>	Not determined.
<b>Evaporation factor</b>	Not determined.

## Polyester Injection Resin Styrene Free

<b>Flammability (solid, gas)</b>	Not determined.
<b>Upper/lower flammability or explosive limits</b>	Not determined.
<b>Other flammability</b>	Not determined.
<b>Vapour pressure</b>	6 hPa @ 20°C
<b>Vapour density</b>	Not determined.
<b>Relative density</b>	1.65 - 1.75 @ 20°C
<b>Bulk density</b>	Not applicable.
<b>Solubility(ies)</b>	Insoluble in water
<b>Partition coefficient</b>	Not determined.
<b>Auto-ignition temperature</b>	Not determined.
<b>Decomposition Temperature</b>	Not determined.
<b>Viscosity</b>	> 60 S ISO2431
<b>Explosive properties</b>	No information available.
<b>Oxidising properties</b>	Does not meet the criteria for classification as oxidising.

### 9.2. Other information

#### SECTION 10 Stability and reactivity

##### 10.1. Reactivity

**Reactivity** The following materials may react with the product: Organic peroxides/hydroperoxides.

##### 10.2. Chemical stability

**Stability** Stable at normal ambient temperatures.

##### 10.3. Possibility of hazardous reactions

**Possibility of hazardous reactions** Does not decompose when used and stored as recommended.

##### 10.4. Conditions to avoid

**Conditions to avoid** Avoid excessive heat for prolonged periods of time.

##### 10.5. Incompatible materials

**Materials to avoid** Organic peroxides/hydroperoxides.

##### 10.6. Hazardous decomposition products

**Hazardous decomposition products** Oxides of carbon.

#### SECTION 11 Toxicological information

##### 11.1. Information on toxicological effects

###### Acute toxicity - inhalation

**ATE inhalation (vapours mg/l)** 79.09

**Inhalation** Gas or vapour in high concentrations may irritate the respiratory system. Symptoms following overexposure may include the following: Coughing.

## Polyester Injection Resin Styrene Free

<b>Ingestion</b>	May cause discomfort if swallowed.
<b>Skin contact</b>	Causes skin irritation.
<b>Eye contact</b>	Irritating to eyes.
<b>Acute and chronic health hazards</b>	Irritating to skin. Irritating to eyes.
<b>Route of entry</b>	Skin and/or eye contact.
<b>Medical symptoms</b>	Irritation of eyes and mucous membranes. Irritation of nose, throat and airway. Skin irritation.
<b>Medical considerations</b>	Skin disorders and allergies.

### Toxicological information on ingredients.

#### VINYL TOLUENE

##### Acute toxicity - inhalation

ATE inhalation (vapours mg/l) 11.0

##### Carcinogenicity

IARC carcinogenicity IARC Group 3 Not classifiable as to its carcinogenicity to humans.

### SECTION 12 Ecological Information

**Ecotoxicity** Not regarded as dangerous for the environment.

#### 12.1. Toxicity

##### Ecological information on ingredients.

#### VINYL TOLUENE

**Acute toxicity - fish** LC50, 96 hours: 23.4 mg/l, Pimephales promelas (Fat-head Minnow)

#### 12.2. Persistence and degradability

#### 12.3. Bioaccumulative potential

**Bioaccumulative potential** No data available on bioaccumulation.

**Partition coefficient** Not determined.

##### Ecological information on ingredients.

#### VINYL TOLUENE

**Partition coefficient** log Pow: 3.36

#### 12.4. Mobility in soil

**Mobility** Not applicable.

#### 12.5. Results of PBT and vPvB assessment

**Results of PBT and vPvB assessment** This product does not contain any substances classified as PBT or vPvB.

#### 12.6. Other adverse effects

**Other adverse effects** Not applicable.

### SECTION 13: Disposal considerations

## Polyester Injection Resin Styrene Free

### 13.1. Waste treatment methods

<b>General information</b>	Dispose of waste product or used containers in accordance with local regulations
<b>Disposal methods</b>	Dispose of waste via a licensed waste disposal contractor.

### SECTION 14: Transport information

**Road transport notes** Not regulated.

**Rail transport notes** Not regulated.

#### 14.1. UN number

**UN No. (IMDG)** 1866

**UN No. (ICAO)** 1866

#### 14.2. UN proper shipping name

**Proper shipping name (IMDG)** RESIN SOLUTION

**Proper shipping name (ICAO)** RESIN SOLUTION

#### 14.3. Transport hazard class(es)

**IMDG class** 3

**ICAO class/division** 3

#### Transport labels



#### 14.4. Packing group

**IMDG packing group** III

**ICAO packing group** III

#### 14.5. Environmental hazards

**Environmentally hazardous substance/marine pollutant**  
No.

#### 14.6. Special precautions for user

**EmS** F-E, S-E

#### 14.7. Transport in bulk according to Annex II of MARPOL and the IBC Code

**Transport in bulk according to** Not relevant.  
**Annex II of MARPOL 73/78**  
**and the IBC Code**

### SECTION 15: Regulatory information

#### 15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

**EU legislation** (EU) No 2015/830

**Guidance** Workplace Exposure Limits EH40.

#### 15.2. Chemical safety assessment

No chemical safety assessment has been carried out.

## Polyester Injection Resin Styrene Free

### Inventories

#### US - TSCA

All the ingredients are listed or exempt.

#### US - TSCA 12(b) Export Notification

None of the ingredients are listed or exempt.

### SECTION 16 Other information

<b>Revision comments</b>	NOTE: Lines within the margin indicate significant changes from the previous revision.
<b>Revision date</b>	05/04/2016
<b>Revision</b>	4
<b>Supersedes date</b>	24/03/2016
<b>SDS number</b>	20338
<b>Hazard statements in full</b>	H226 Flammable liquid and vapour. H304 May be fatal if swallowed and enters airways. H315 Causes skin irritation. H319 Causes serious eye irritation. H332 Harmful if inhaled.

This information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process. Such information is, to the best of the company's knowledge and belief, accurate and reliable as of the date indicated. However, no warranty guarantee or representation is made to its accuracy, reliability or completeness. It is the user's responsibility to satisfy himself as to the suitability of such information for his own particular use.



## SAFETY DATA SHEET Polyester Injection Resin Styrene Free

### Part B

#### SECTION 1: Identification of the substance/mixture and of the company/undertaking

##### 1.1. Product identifier

Product name Polyester Injection Resin, Styrene Free  
Product number JF150P and JFEA300SF and JF380PSF

##### 1.2. Relevant identified uses of the substance or mixture and uses advised against

Identified uses Catalyst.

##### 1.3. Details of the supplier of the safety data sheet

Supplier JCP Construction Products  
Unit 14 Teddington Business Park Station Rd  
Teddington TW11 9BQ  
Tel +44 208 943 1800  
Fax +44 208 943 1140  
Web [www.jcpfixings.co.uk](http://www.jcpfixings.co.uk)  
Contact person [jcpenquiries@owlett-jaton.com](mailto:jcpenquiries@owlett-jaton.com)

##### 1.4. Emergency telephone number

Emergency telephone Tel +44 208 943 1800 Monday to Friday 9.00 to 5.00

#### SECTION 2: Hazards identification

##### 2.1. Classification of the substance or mixture

###### Classification (EC 1272/2008)

Physical hazards Not Classified  
Health hazards Eye Irrit. 2 - H319 Skin Sens. 1 - H317  
Environmental hazards Aquatic Acute 1 - H400 Aquatic Chronic 3 - H412

Human health May cause skin disorders if contact is repeated or prolonged. The product is irritating to eyes and skin.

Environmental The product contains a substance which is very toxic to aquatic organisms and which may cause long-term adverse effects in the aquatic environment.

Physicochemical Not considered to be a significant hazard due to the small quantities used.

##### 2.2. Label elements

###### Pictogram



## Polyester Injection Resin Styrene Free

<b>Signal word</b>	Warning
<b>Hazard statements</b>	H317 May cause an allergic skin reaction. H319 Causes serious eye irritation. H400 Very toxic to aquatic life. H412 Harmful to aquatic life with long lasting effects.
<b>Precautionary statements</b>	P273 Avoid release to the environment. P280 Wear protective gloves/ protective clothing/ eye protection/ face protection. P302+P352 IF ON SKIN: Wash with plenty of water. P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. P333+P313 If skin irritation or rash occurs: Get medical advice/ attention. P501 Dispose of contents/ container in accordance with national regulations.
<b>Contains</b>	BENZOYL PEROXIDE
<b>Supplementary precautionary statements</b>	P264 Wash contaminated skin thoroughly after handling. P337+P313 If eye irritation persists: Get medical advice/ attention. P362+P364 Take off contaminated clothing and wash it before reuse. P391 Collect spillage. P411 Store at temperatures not exceeding 25°C/77°F.

### 2.3. Other hazards

## SECTION 3: Composition/information on ingredients

### 3.2. Mixtures

<b>BENZOYL PEROXIDE</b>		<b>10-15%</b>
CAS number: 94-36-0	EC number: 202-327-6	REACH registration number: 01-2119511472-50-XXXX
M factor (Acute) = 10		
<b>Classification</b>		
Org. Perox. B - H241		
Eye Irrit. 2 - H319		
Skin Sens. 1 - H317		
Aquatic Acute 1 - H400		
<b>BENZOIC ACID,NONYL ESTER,BRANCHED AND LINEAR</b>		<b>5-10%</b>
CAS number: 670241-72-2	EC number: 447-010-5	REACH registration number: 01-0000018876-55-XXXX
<b>Classification</b>		
Aquatic Chronic 2 - H411		

The Full Text for all R-Phrases and Hazard Statements are Displayed in Section 16.

## SECTION 4: First aid measures

### 4.1. Description of first aid measures

<b>Inhalation</b>	Move affected person to fresh air at once. Get medical attention if any discomfort continues.
<b>Ingestion</b>	Never give anything by mouth to an unconscious person. Do not induce vomiting. Rinse mouth thoroughly with water. Get medical attention if any discomfort continues.



## Polyester Injection Resin Styrene Free

**Skin contact** Remove affected person from source of contamination. Remove contaminated clothing. Wash skin thoroughly with soap and water. Get medical attention if any discomfort continues.

**Eye contact** Rinse immediately with plenty of water. Remove any contact lenses and open eyelids wide apart. Continue to rinse for at least 15 minutes. Get medical attention if irritation persists after washing. Show this Safety Data Sheet to the medical personnel.

### 4.2. Most important symptoms and effects, both acute and delayed

**Ingestion** May cause discomfort if swallowed.

**Skin contact** Causes skin irritation.

**Eye contact** Irritation of eyes and mucous membranes.

### 4.3. Indication of any immediate medical attention and special treatment needed

**Notes for the doctor** No specific recommendations. If in doubt, get medical attention promptly.

## SECTION 5: Firefighting measures

### 5.1. Extinguishing media

**Suitable extinguishing media** Extinguish with foam, carbon dioxide or dry powder.

### 5.2. Special hazards arising from the substance or mixture

**Specific hazards** No specific precautions due to the small quantities handled.

**Hazardous combustion products** Oxides of carbon.

### 5.3. Advice for firefighters

**Protective actions during firefighting** Avoid breathing fire gases or vapours.

**Special protective equipment for firefighters** Wear positive-pressure self-contained breathing apparatus (SCBA) and appropriate protective clothing.

## SECTION 6: Accidental release measures

### 6.1. Personal precautions, protective equipment and emergency procedures

**Personal precautions** Wear protective clothing as described in Section 8 of this safety data sheet.

### 6.2. Environmental precautions

**Environmental precautions** Avoid release to the environment.

### 6.3. Methods and material for containment and cleaning up

**Methods for cleaning up** Collect and place in suitable waste disposal containers and seal securely. For waste disposal, see Section 13.

### 6.4. Reference to other sections

**Reference to other sections** Wear protective clothing as described in Section 8 of this safety data sheet. For waste disposal, see Section 13.

## SECTION 7: Handling and storage

### 7.1. Precautions for safe handling

**Usage precautions** Keep away from heat, sparks and open flame.

## Polyester Injection Resin Styrene Free

**Advice on general occupational hygiene** Do not eat, drink or smoke when using this product. No specific hygiene procedures recommended but good personal hygiene practices should always be observed when working with chemical products.

### 7.2. Conditions for safe storage, including any incompatibilities

**Storage precautions** Keep away from flammable and combustible materials. Store in closed original container at temperatures between 5°C and 25°C.

**Storage class** Chemical storage.

### 7.3. Specific end use(s)

**Specific end use(s)** The identified uses for this product are detailed in Section 1.2.

## SECTION 8: Exposure Controls/personal protection

### 8.1. Control parameters

#### Occupational exposure limits

#### BENZOYL PEROXIDE

Long-term exposure limit (8-hour TWA): WEL 5 mg/m<sup>3</sup>

WEL = Workplace Exposure Limit

#### BENZOYL PEROXIDE (CAS: 94-36-0)

<b>DNEL</b>	Industry - Dermal; Long term : 6.6 mg/kg/day Industry - Oral; Long term : 1.6 mg/kg/day Industry - Inhalation; Long term : 11.75 mg/m <sup>3</sup>
<b>PNEC</b>	- Fresh water; 0.000602 mg/l - Sediment (Freshwater); 0.338 mg/kg - STP; 0.35 mg/l - Marine water; 0.0000602 mg/l - Sediment (Marinewater); 0.0338 mg/kg

### 8.2. Exposure controls

#### Protective equipment



#### Appropriate engineering controls

Provide adequate ventilation.

#### Eye/face protection

The following protection should be worn: Chemical splash goggles.

#### Hand protection

Wear protective gloves made of the following material: Nitrile rubber.

#### Other skin and body protection

Wear appropriate clothing to prevent any possibility of skin contact.

#### Hygiene measures

Wash hands at the end of each work shift and before eating, smoking and using the toilet. **DO NOT SMOKE IN WORK AREA!**

#### Respiratory protection

No specific recommendations.

## SECTION 9: Physical and Chemical Properties

### 9.1. Information on basic physical and chemical properties

**Appearance** Liquid

## Polyester Injection Resin Styrene Free

<b>Colour</b>	Black.
<b>Odour</b>	Characteristic.
<b>Odour threshold</b>	Not determined.
<b>pH</b>	Not determined.
<b>Melting point</b>	Not applicable.
<b>Initial boiling point and range</b>	Not applicable.
<b>Flash point</b>	Not applicable.
<b>Evaporation rate</b>	Not determined.
<b>Evaporation factor</b>	Not determined.
<b>Flammability (solid, gas)</b>	Not determined.
<b>Upper/lower flammability or explosive limits</b>	Not determined.
<b>Other flammability</b>	Not determined.
<b>Vapour pressure</b>	Not determined.
<b>Vapour density</b>	Not determined.
<b>Relative density</b>	1.5 - 1.6
<b>Bulk density</b>	Not applicable.
<b>Solubility(ies)</b>	Not determined.
<b>Partition coefficient</b>	Not determined.
<b>Auto-ignition temperature</b>	Not determined.
<b>Decomposition Temperature</b>	>50°C
<b>Viscosity</b>	> 60 S ISO2431
<b>Explosive properties</b>	No information available.
<b>Oxidising properties</b>	Not determined.

### 9.2. Other information

## SECTION 10: Stability and reactivity

### 10.1. Reactivity

**Reactivity** The following materials may react with the product: Acids. Alkalis. Amines. Strong reducing agents.

### 10.2. Chemical stability

**Stability** Stable at normal ambient temperatures and when used as recommended. Will decompose at temperatures exceeding 50°C.

### 10.3. Possibility of hazardous reactions

**Possibility of hazardous reactions** Will not polymerise.

### 10.4. Conditions to avoid

**Conditions to avoid** Avoid contact with strong reducing agents. Avoid heat. Avoid contact with acids and alkalis.

## Polyester Injection Resin Styrene Free

### 10.5. Incompatible materials

**Materials to avoid** Strong reducing agents. Acids, non-oxidising. Acids - organic. Alkalis - inorganic. Alkalis - organic. Amines.

### 10.6. Hazardous decomposition products

**Hazardous decomposition products** Oxides of carbon.

## SECTION 11: Toxicological information

### 11.1. Information on toxicological effects

#### Skin sensitisation

**Skin sensitisation** Sensitising.

**Inhalation** No specific health hazards known.

**Ingestion** May cause discomfort if swallowed.

**Skin contact** Irritating to skin. May cause sensitisation by skin contact.

**Eye contact** Irritation of eyes and mucous membranes.

**Route of entry** Skin and/or eye contact.

**Medical symptoms** Skin irritation. Irritation of eyes and mucous membranes.

**Medical considerations** No information available.

#### Toxicological information on ingredients.

#### BENZOYL PEROXIDE

##### Acute toxicity - oral

**Acute toxicity oral (LD<sub>50</sub> mg/kg)** 950.0

**Species** Rat

##### Carcinogenicity

**IARC carcinogenicity** IARC Group 3 Not classifiable as to its carcinogenicity to humans.

## SECTION 12: Ecological Information

### 12.1. Toxicity

#### Ecological information on ingredients.

#### BENZOYL PEROXIDE

##### Acute aquatic toxicity

**LE(C)<sub>50</sub>** 0.01 < L(E)C<sub>50</sub> ≤ 0.1

**M factor (Acute)** 10

**Acute toxicity - fish** LC<sub>50</sub>, 96 hours: 0.06 mg/l, Onchorhynchus mykiss (Rainbow trout)

**Acute toxicity - aquatic invertebrates** EC<sub>50</sub>, 48 hours: 0.11 mg/l, Daphnia magna

**Acute toxicity - aquatic plants** EC<sub>50</sub>, 72 hours: 0.07 mg/l, Selenastrum capricornutum

## Polyester Injection Resin Styrene Free

### BENZOIC ACID,NONYL ESTER,BRANCHED AND LINEAR

<b>Acute toxicity - fish</b>	LC <sub>50</sub> , 24 hours: > 1.23 mg/l, Cyprinus carpio (Common carp) LC <sub>50</sub> , 48 hours: > 1.23 mg/l, Cyprinus carpio (Common carp) LC <sub>50</sub> , 72 hours: > 1.23 mg/l, Cyprinus carpio (Common carp) EC <sub>50</sub> , 96 hours: > 1.23 mg/l, Cyprinus carpio (Common carp) EC <sub>100</sub> , 96 hours: > 1.23 mg/l, Cyprinus carpio (Common carp) NOEC, 96 hours: > 1.23 mg/l, Cyprinus carpio (Common carp)
<b>Acute toxicity - aquatic invertebrates</b>	EC <sub>50</sub> , 24 hours: > 2.2 mg/l, Daphnia magna EC <sub>50</sub> , 48 hours: > 2.2 mg/l, Daphnia magna NOEC, 48 hours: > 2.2 mg/l, Daphnia magna
<b>Acute toxicity - microorganisms</b>	IC <sub>50</sub> , 3 hours: > 1000 mg/l, Activated sludge NOEC, 3 hours: > 1000 mg/l, Activated sludge

#### 12.2. Persistence and degradability

**Persistence and degradability** There are no data on the degradability of this product.

#### 12.3. Bioaccumulative potential

**Bioaccumulative potential** No data available on bioaccumulation.

**Partition coefficient** Not determined.

#### 12.4. Mobility in soil

**Mobility** Mobile. The product is partly miscible with water and may spread in the aquatic environment.

#### 12.5. Results of PBT and vPvB assessment

**Results of PBT and vPvB assessment** This product does not contain any substances classified as PBT or vPvB.

#### 12.6. Other adverse effects

### **SECTION 13: Disposal considerations**

#### 13.1. Waste treatment methods

**General information** Dispose of waste product or used containers in accordance with local regulations

**Disposal methods** Dispose of waste via a licensed waste disposal contractor.

### **SECTION 14: Transport information**

#### 14.1. UN number

UN No. (ADR/RID) 3082

UN No. (IMDG) 3082

UN No. (ICAO) 3082

UN No. (ADN) 3082

#### 14.2. UN proper shipping name

**Proper shipping name (ADR/RID)** ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. BENZOYL PEROXIDE

**Proper shipping name (IMDG)** ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. BENZOYL PEROXIDE

**Proper shipping name (ICAO)** ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. BENZOYL PEROXIDE

**Proper shipping name (ADN)** ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. BENZOYL PEROXIDE

## Polyester Injection Resin Styrene Free

### 14.3. Transport hazard class(es)

ADR/RID class	9
ADR/RID classification code	M6
ADR/RID label	9
IMDG class	9
ICAO class/division	9
ADN class	9

#### Transport labels



### 14.4. Packing group

ADR/RID packing group	III
IMDG packing group	III
ADN packing group	III
ICAO packing group	III

### 14.5. Environmental hazards

Environmentally hazardous substance/marine pollutant



### 14.6. Special precautions for user

EmS	F-A, S-F
ADR transport category	3
Emergency Action Code	•3Z
Hazard Identification Number (ADR/RID)	90
Tunnel restriction code	(E)

### 14.7. Transport in bulk according to Annex II of MARPOL and the IBC Code

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code Not applicable.

## SECTION 15: Regulatory information

### 15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

EU legislation	(EU) No 2015/830
Guidance	Workplace Exposure Limits EH40.

### 15.2. Chemical safety assessment

No chemical safety assessment has been carried out.

## Polyester Injection Resin Styrene Free

### Inventories

#### US - TSCA

All the ingredients are listed or exempt.

#### US - TSCA 12(b) Export Notification

None of the ingredients are listed or exempt.

### SECTION 16: Other information

<b>Revision comments</b>	NOTE: Lines within the margin indicate significant changes from the previous revision.
<b>Revision date</b>	26/05/2016
<b>Revision</b>	7
<b>Supersedes date</b>	11/01/2016
<b>SDS number</b>	20488
<b>Hazard statements in full</b>	H241 Heating may cause a fire or explosion. H317 May cause an allergic skin reaction. H319 Causes serious eye irritation. H400 Very toxic to aquatic life. H411 Toxic to aquatic life with long lasting effects. H412 Harmful to aquatic life with long lasting effects.

This information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process. Such information is, to the best of the company's knowledge and belief, accurate and reliable as of the date indicated. However, no warranty guarantee or representation is made to its accuracy, reliability or completeness. It is the user's responsibility to satisfy himself as to the suitability of such information for his own particular use.



# Declaration of Performance No. 1020-CPD-030046

Injection Resin JF380PSF and JF150P Polyester Resin Styrene Free  
 JCP Construction Products,  
 Unit 14 Teddington Business Park, Station Rd, Teddington, Middlesex TW11 9BQ  
 Telephone +44 (0)208 943 1800

Intended use or uses of the products according to EAD 330499-00-0601								
Generic type			Bonded Anchor					
Base material			Non-cracked concrete C20/25 to C50/60 acc. EN 206-2:2003 The anchor may be installed in dry, wet and flooded holes					
Batch number			Marked on individual tubes					
Steel elements			1] Galvanised carbon steel Grade 5.8, 8.8 and 10.9 to EN ISO 891-1 2] Stainless Steel 1.4401, 1.4404 or 1.4571 Property class 70 or 80 to EN ISO 3506 3] High corrosion resistant stainless steel to 1.4529, 1.4565					
Durability			1] Dry internal conditions 2] Internal and external atmospheric exposure including industrial and marine environment, or exposure in permanently damp internal conditions, if no particularly aggressive conditions exist. 3] Internal and external atmospheric exposure including industrial and marine environment, or exposure in permanently damp internal conditions, and in other particularly aggressive conditions.					
Loading			Static, quasi-static					
ETA 13/0782 issued by			ZUS					
On the basis of			EAD 330499-00-0601					
Certificate of Conformity 1020-CPD-090-030046 issued by			ZUS					
Under system			1					
Temperature range(s)			-40°C to +80°C (Max. short term temperature +80°C and Max. long term temperature +50°C)					
Declared performances according to EAD 330499-00-0601								
Essential Characteristics			Performance					
			M08	M10	M12	M16	M20	M24
Installation parameters								
$d_o$	Nominal diameter of drill bit	[mm]	10	12	14	18	22	26
$d_f$	Fixture clearance hole	[mm]	10	12	14	18	22	26
$d_b$	Brush diameter	[mm]	14	14	20	20	29	29
$T_{inst}$	Nominal torque moment	[mm]	10	20	40	80	150	200
$h_{ef,min}$	Minimum effective anchorage depth = 8d							
$h_o$	Depth of drill hole	[mm]	64	80	96	128	160	192
$h_{min}$	Minimum thickness of concrete member	[mm]	100	110	126	158	200	240
$S_{min}$	Minimum spacing	[mm]	35	40	50	65	80	96
$C_{min}$	Minimum edged distance	[mm]	35	40	50	65	80	96
$h_{ef,max}$	Maximum effective anchorage depth = 12d							
$h_o$	Depth of drill hole	[mm]	96	120	144	192	240	288
$h_{min}$	Minimum thickness of concrete member	[mm]	126	150	174	222	280	336
$S_{min}$	Minimum spacing	[mm]	50	60	70	95	120	145
$C_{min}$	Minimum edged distance	[mm]	50	60	70	95	120	145
Tensile Steel failure								
NRk,s	Characteristic tensile resistance steel <b>Grade 5.8</b>	[kN]	18	29	42	79	123	177
NRk,s	Characteristic tensile resistance steel <b>Grade 8.8</b>	[kN]	29	46	67	126	196	282
$\gamma_{M,s}$	Partial safety factor	[-]	1.5					
NRk,s	Characteristic tensile resistance steel <b>Grade 10.9</b>	[kN]	37	58	84	157	245	353
$\gamma_{M,s}$	Partial safety factor	[-]	1.4					
NRk,s	Characteristic tensile resistance steel <b>Grade A4-70</b>	[kN]	26	41	59	110	172	247
$\gamma_{M,s}$	Partial safety factor	[-]	1.9					
NRk,s	Characteristic tensile resistance steel <b>Grade A4-80</b>	[kN]	29	46	67	126	196	282
$\gamma_{M,s}$	Partial safety factor	[-]	1.6					
NRk,s	Characteristic tensile resistance HCR steel <b>Grade 1.4529</b>	[kN]	26	41	59	110	172	247
$\gamma_{M,s}$	Partial safety factor	[-]	1.5					

Supplied By



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 www.fastenersfixingsandtools.co.uk




Combined pull-out and concrete cone failure								
Characteristic bond resistance in non-cracked concrete C20/25								
$\tau_{Rk}$	Dry and wet concrete	[N/mm <sup>2</sup> ]	8.5	8.0	9.0	9.0	8.0	7.5
$\gamma_{M,p}$	Partial safety factor	[-]	1.8					
$\tau_{Rk}$	Flooded hole	[N/mm <sup>2</sup> ]	8.5	8.0	9.0	9.0	8.0	7.5
$\gamma_{M,p}$	Partial safety factor	[-]	1.8					
$\Psi_c$	Factor for C25/30 concrete	[-]	1.12					
$\Psi_c$	Factor for C30/37 concrete	[-]	1.19					
$\Psi_c$	Factor for C50/60 concrete	[-]	1.30					
Splitting failure								
$S_{cr,sp}$	Critical spacing (Splitting)	[mm]	4.0h <sub>ef</sub>			3.0h <sub>ef</sub>		
$C_{cr,sp}$	Critical edge distance (Splitting)	[mm]	2.0h <sub>ef</sub>			1.5h <sub>ef</sub>		
$\gamma_{M,p}$	Partial safety factor	[-]	1.8					
Displacement under tensile loading								
$N_{U,cr}$	Service tensile loads in non-cracked concrete	[kN]	6.3	7.9	11.9	23.8	29.8	45.6
$\delta N_0$	Short term displacement under tensile loads	[mm]	0.2	0.2	0.3	0.5	0.7	0.9
$\delta N_{\infty}$	Long term displacement under tensile loads	[mm]	0.4	0.4	0.4	0.4	0.4	0.4
Shear steel failure without lever arm								
$V_{Rk,s}$	Characteristic shear steel failure <b>Grade 5.8</b>	[kN]	9	15	21	39	61	88
$V_{Rk,s}$	Characteristic shear steel failure <b>Grade 8.8</b>	[kN]	15	23	34	63	98	141
$\gamma_{m,sV}$	Partial safety factor	[-]	1.25					
$V_{Rk,s}$	Characteristic shear steel failure <b>Grade 10.9</b>	[kN]	18	29	42	79	123	177
$\gamma_{m,sV}$	Partial safety factor	[-]	1.5					
$V_{Rk,s}$	Characteristic shear steel failure <b>Grade A4-70</b>	[kN]	13	20	30	55	86	124
$\gamma_{m,sV}$	Partial safety factor	[-]	1.56					
$V_{Rk,s}$	Characteristic shear steel failure <b>Grade A4-80</b>	[kN]	15	23	34	63	98	141
$\gamma_{m,sV}$	Partial safety factor	[-]	1.33					
Shear steel failure with lever arm								
$M_{Rk,s}^0$	Characteristic bending moment <b>Grade 5.8</b>	[Nm]	19	37	66	166	325	561
$M_{Rk,s}^0$	Characteristic bending moment <b>Grade 8.8</b>	[Nm]	30	60	105	266	519	898
$\gamma_{m,sV}$	Partial safety factor	[-]	1.25					
$M_{Rk,s}^0$	Characteristic bending moment <b>Grade 10.9</b>	[Nm]	37	75	131	333	649	1123
$\gamma_{m,sV}$	Partial safety factor	[-]	1.5					
$M_{Rk,s}^0$	Characteristic bending moment <b>Grade A4-70</b>	[Nm]	26	52	92	233	454	786
$\gamma_{m,sV}$	Partial safety factor	[-]	1.56					
$M_{Rk,s}^0$	Characteristic bending moment <b>Grade A4-80</b>	[Nm]	30	60	105	266	519	898
$\gamma_{m,sV}$	Partial safety factor	[-]	1.33					
$M_{Rk,s}^0$	Characteristic bending moment <b>1.4529</b>	[Nm]	26	52	92	233	454	786
$\gamma_{m,sV}$	Partial safety factor	[-]	1.25					
Concrete pryout failure								
$k_b$	Factor in equation EAD 330499-00-0601, Para. 2.2.8, Table 2.6	[-]	2.0					
$\gamma_{M,c}$	Partial safety factor	[-]	1.5					
Shear concrete edge failure								
$l_{ef}$	Effective anchorage length	[mm]	Effective Embedment Depth (h <sub>ef</sub> )					
Displacement under shear load								
$V$	Service shear load in concrete	[kN]	5.2	8.3	12.0	22.4	35.0	50.4
$\delta V_0$	Short term displacement under shear load	[mm]	0.1	0.1	0.2	0.4	0.8	1.5
$\delta V_{\infty}$	Long term displacement under shear load	[mm]	0.2	0.2	0.3	0.6	1.2	2.3

Amendment	Date
JF300PSF Removed	16/06/2016
ETAG changed to EAD	19/12/2017

The performances of the product identified by the above product codes are in conformity with the declared performance.

This Declaration of performance is issued under the sole responsibility of JCP Construction Products

Signed for and on behalf of the manufacturers

Name and function	Place and date of issue	Signature
Brian Deluce	Teddington	
Technical Manager	19/12/2017	



JF 150P  
Vol. 150ml

JF 380PSF  
Vol. 410ml

## INFORMATION

Polyester Styrene Free Resin is a two part grey resin (10:1) suitable for use in the vast majority of base materials. It can be used for installing threaded studs, rebar or internal threaded sockets for structural applications such as:

- Columns
- Guard rails
- Façades
- Staircases
- Cantilever beams

## BASE MATERIAL

- Concrete C20/25 To C50/60
- Non-Cracked Concrete
- Dry/Wet/Flooded Holes
- Solid Brickwork
- Concrete Block
- Hollow Base Materials
- Natural Stone

## APPROVALS

European Technical Assessment  
Option 7 Non-Cracked Concrete



ETA13/0782

## FEATURES

- Expansion Free
- High Performance
- Close Spacing And Edge Distance

## RELATED PRODUCTS



JT00L380  
(410ml Tube)

JT00L900  
(150 & 300ml Tubes)

Injection Resin Gun



Hole Cleaning Brushes and Pump



Mixer Nozzle  
JMN130

Wire Mesh  
Sleeve

Nylon Sleeve

Injection Accessories

## WORKING/LOADING TIME

Note:

$T_{work}$  = The highest temperature in the range

$T_{load}$  = The lowest temperature in the range

Cartridge & Base Material Temperature °C	Usable Time $T_{work}$ (mins)	Load Time $T_{load}$ (mins)
Min. +5°C	18	145
+5°C to +10°C	10	145
+10°C to +20°C	6	85
+20°C to +25°C	5	50
+25°C to +30°C	4	40
+30°C	4	35

Ensure Cartridge Temperature is > 5°C

## EMBEDDED THREADED ROD



- Stainless Steel Grade A4/316
- Chisel End Studs
- Setting Tool Included

- Stainless Steel Grade A4/316
- Chisel End Studs
- Plain Ended

- Zinc Plated and Clear Passivated (Min 5µm)
- Chisel End Studs
- Plain Ended

- Zinc Plated and Clear Passivated (Min 5µm)
- Chisel End Studs
- Setting Tool Included

Supplied By

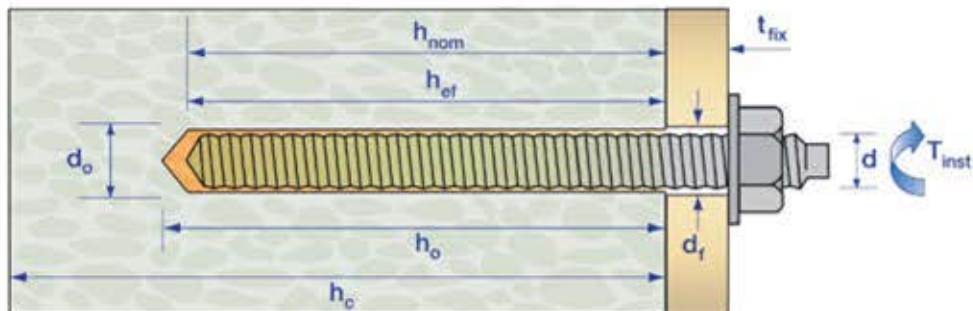


## RANGE AND LOAD DATA

RANGE DATA											
Part Number	Thread Diam (d) mm	Stud Length (L) mm	Drill Hole Diam. (d <sub>o</sub> ) mm	Fixture Clearance Hole (d <sub>i</sub> ) mm	Standard Embedment		Shallow Embedment		Deep Embedment		Tightening Torque (T <sub>inst</sub> ) Nm
					Max. Fix. Thickness (t <sub>fix</sub> ) mm	Min. Hole Depth (h <sub>o</sub> ) mm**	Max. Fix. Thickness (t <sub>fix</sub> ) mm	Min. Hole Depth (h <sub>o</sub> ) mm	Max. Fix. Thickness (t <sub>fix</sub> ) mm	Min. Hole Depth (h <sub>o</sub> ) mm	
Stainless Steel Grade A4/316 Chisel End Studs											
JSTUD08110SSA4	M8	110	10	10	18	80	38	64	6	96	10
JSTUD10130SSA4	M10	130	12	12	25	90	40	80	*	120	20
JSTUD12160SSA4	M12	160	14	14	34	110	51	96	3	144	40
JSTUD16190SSA4	M16	190	18	18	42	128	44	128	*	192	80
JSTUD20260SSA4	M20	260	22	22	55	170	79	160	*	240	150
JSTUD24300SSA4	M24	300	26	26	55	210	82	192	*	288	200
Stainless Steel Grade A4/316 Plain Ended and Chisel End Studs											
JSTUD08150PESS	M8	150	10	10	62	80	78	64	46	96	10
JSTUD10105PESS	M10	105	12	12	5	90	15	80	*	120	20
JSTUD10150PESS		150			50		60		20		
JSTUD10200PESS		200			100		110		70		
JSTUD12110PESS	M12	110	14	14	*	110	1	96	*	144	40
JSTUD12150PESS		150			27		41		43		
JSTUD12200PESS		200			77		91		43		
JSTUD16110PESS	M16	110	18	18	*	128	*	128	*	192	80
JSTUD16250PESS		250			104		104		40		
JSTUD16350PESS		350			204		204		140		
JSTUD20200PESS	M20	200	22	22	9	170	19	160	*	240	150
JSTUD20400PESS		400			209		219		139		

\* Deep Embedment Depth can be achieved by using suitable threaded rod cut to length:  $L = h_o + (t_{fix} + t_{Nut+Washer})$

\*\* For the Polyester Styrene Free Resin:  $h_o = h_{ef}$

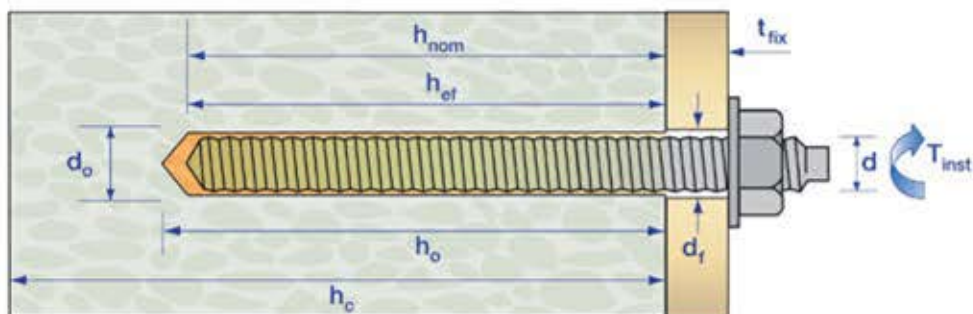




RANGE DATA											
Part Number	Thread Diam (d) mm	Stud Length (L) mm	Drill Hole Diam. (d <sub>o</sub> ) mm	Fixture Clearance Hole (d <sub>r</sub> ) mm	Standard Embedment		Shallow Embedment		Deep Embedment		Tightening Torque (T <sub>inst</sub> ) Nm
					Max. Fix. Thickness (t <sub>fix</sub> ) mm	Min. Hole Depth (h <sub>o</sub> ) mm**	Max. Fix. Thickness (t <sub>fix</sub> ) mm	Min. Hole Depth (h <sub>o</sub> ) mm	Max. Fix. Thickness (t <sub>fix</sub> ) mm	Min. Hole Depth (h <sub>o</sub> ) mm	
Zinc Plated Steel Grade 5.8 - Clear Passivated Plain Ended and Chisel End Studs											
JSTUD08150PE	M8	150	10	10	62	80	78	64	46	96	10
JSTUD10105PE	M10	105	12	12	5	90	15	80	*	120	20
JSTUD10150PE		150			50		60		20		
JSTUD10200PE		200			100		110		70		
JSTUD12110PE	M12	110	14	14	*	110	1	96	*	144	40
JSTUD12150PE		150			27		41		43		
JSTUD12200PE		200			77		91		43		
JSTUD16110PE	M16	110	18	18	*	128	*	128	*	192	80
JSTUD16250PE		250			104		104		40		
JSTUD16350PE		350			204		204		140		
JSTUD20200PE	M20	200	22	22	9	170	19	160	*	240	150
JSTUD20400PE		400			209		219		139		
Zinc Plated Steel Grade 5.8 - Clear Passivated and Chisel End Studs											
JSTUD08110	M8	110	10	10	18	80	38	64	6	96	10
JSTUD10130	M10	130	12	12	25	90	40	80	*	120	20
JSTUD12160	M12	160	14	14	34	110	51	96	3	144	40
JSTUD16190	M16	190	18	18	42	128	44	128	*	192	80
JSTUD20260	M20	260	22	22	55	170	79	160	*	240	150
JSTUD24300	M24	300	26	26	55	210	82	192	*	288	200
JSTUD30380	M30	380	35	32	55	280	110	240	*	360	275

\* Deep Embedment Depth can be achieved by using suitable threaded rod cut to length:  $L = h_o + (t_{fix} + t_{Nut+Washer})$

\*\* For the Polyester Styrene Free Resin:  $h_o = h_{ef}$





## GRADE A4-70 STAINLESS STEEL STUDS - NON-CRACKED CONCRETE

### SHALLOW EMBEDMENT

Grade A4-70 Stainless Steel Studs Performance Data (C20/25 non-cracked concrete)

Thread Diam (d) mm	Minimum Hole Depth (h <sub>o</sub> ) mm	Minimum Concrete Thickness (h <sub>min</sub> ) mm	Characteristic Resistance kN		Design Resistance kN		Approved Resistance kN		Design Spacing (S) mm		Design Edge Distance (C) mm	
			Tensile (N <sub>st</sub> )	Shear (V <sub>st</sub> )	Tensile (N <sub>st</sub> )	Shear (V <sub>st</sub> )	Tensile (N <sub>st</sub> )	Shear (V <sub>st</sub> )	Tensile	Shear	Tensile	Shear
8	64	100	13.7	13.0	7.5	8.3	5.3	5.9	180	40	90	90
10	80	110	20.1	20.0	11.1	12.8	7.9	9.1	210	40	110	120
12	96	130	32.6	30.0	18.0	19.2	12.8	13.7	270	50	140	170
16	128	170	57.9	55.0	32.1	35.2	22.9	25.1	360	70	180	260
20	160	210	80.4	86.0	44.6	55.1	31.8	39.3	420	80	210	370
24	192	250	108.6	124.0	60.3	79.4	43.0	56.7	480	100	240	480

### STANDARD EMBEDMENT

Grade A4-70 Stainless Steel Studs Performance Data (C20/25 non-cracked concrete)

Thread Diam (d) mm	Minimum Hole Depth (h <sub>o</sub> ) mm	Minimum Concrete Thickness (h <sub>min</sub> ) mm	Characteristic Resistance kN		Design Resistance kN		Approved Resistance kN		Design Spacing (S) mm		Design Edge Distance (C) mm	
			Tensile (N <sub>st</sub> )	Shear (V <sub>st</sub> )	Tensile (N <sub>st</sub> )	Shear (V <sub>st</sub> )	Tensile (N <sub>st</sub> )	Shear (V <sub>st</sub> )	Tensile	Shear	Tensile	Shear
8	80	110	17.1	13.0	9.4	8.3	6.7	5.9	180	40	90	80
10	90	120	22.6	20.0	12.5	12.8	8.9	9.1	210	50	110	110
12	110	140	37.3	30.0	20.7	19.2	14.7	13.7	270	60	140	160
16	128	170	57.9	55.0	32.1	35.2	22.9	25.1	360	70	180	260
20	170	220	85.5	86.0	47.4	55.1	33.8	39.3	420	90	210	350
24	210	270	118.8	124.0	65.9	79.4	47.0	56.7	480	110	240	450

### DEEP EMBEDMENT

Grade A4-70 Stainless Steel Studs Performance Data (C20/25 non-cracked concrete)

Thread Diam (d) mm	Minimum Hole Depth (h <sub>o</sub> ) mm	Minimum Concrete Thickness (h <sub>min</sub> ) mm	Characteristic Resistance kN		Design Resistance kN		Approved Resistance kN		Design Spacing (S) mm		Design Edge Distance (C) mm	
			Tensile (N <sub>st</sub> )	Shear (V <sub>st</sub> )	Tensile (N <sub>st</sub> )	Shear (V <sub>st</sub> )	Tensile (N <sub>st</sub> )	Shear (V <sub>st</sub> )	Tensile	Shear	Tensile	Shear
8	96	130	20.5	13.0	11.3	8.3	8.0	5.9	180	50	90	80
10	120	150	30.2	20.0	16.7	12.8	11.9	9.1	210	60	110	100
12	144	175	48.9	30.0	27.1	19.2	19.3	13.7	270	80	140	130
16	192	230	86.9	55.0	48.2	35.2	34.4	25.1	360	100	180	200
20	240	290	120.6	86.0	67.0	55.1	47.8	39.3	420	120	210	280
24	288	350	162.9	124.0	90.4	79.4	64.5	56.7	480	150	240	360





## GRADE 5.8 ZINC PLATED STUDS - NON-CRACKED CONCRETE

### SHALLOW EMBEDMENT

Grade 5.8 Zinc Plated Studs Performance Data (C20/25 non-cracked concrete)

Thread Diam (d) mm	Minimum Hole Depth (h <sub>o</sub> ) mm	Minimum Concrete Thickness (h <sub>min</sub> ) mm	Characteristic Resistance kN		Design Resistance kN		Approved Resistance kN		Design Spacing (S) mm		Design Edge Distance (C) mm	
			Tensile (N <sub>st</sub> )	Shear (V <sub>st</sub> )	Tensile (N <sub>st</sub> )	Shear (V <sub>st</sub> )	Tensile (N <sub>st</sub> )	Shear (V <sub>st</sub> )	Tensile	Shear	Tensile	Shear
8	64	100	13.7	9.0	7.5	7.2	5.3	5.1	180	40	90	70
10	80	110	20.1	15.0	11.1	12.0	7.9	8.5	210	40	110	110
12	96	130	32.6	21.0	18.0	16.8	12.8	12.0	270	50	140	140
16	128	170	57.9	39.0	32.1	31.2	22.9	22.2	360	70	180	230
20	160	210	80.4	61.0	44.6	48.8	31.8	34.8	420	80	210	320
24	192	250	108.6	88.0	60.3	70.4	43.0	50.2	480	100	240	420

### STANDARD EMBEDMENT

Grade 5.8 Zinc Plated Studs Performance Data (C20/25 non-cracked concrete)

Thread Diam (d) mm	Minimum Hole Depth (h <sub>o</sub> ) mm	Minimum Concrete Thickness (h <sub>min</sub> ) mm	Characteristic Resistance kN		Design Resistance kN		Approved Resistance kN		Design Spacing (S) mm		Design Edge Distance (C) mm	
			Tensile (N <sub>st</sub> )	Shear (V <sub>st</sub> )	Tensile (N <sub>st</sub> )	Shear (V <sub>st</sub> )	Tensile (N <sub>st</sub> )	Shear (V <sub>st</sub> )	Tensile	Shear	Tensile	Shear
8	80	110	17.1	9.0	9.4	7.2	6.7	5.1	180	40	90	70
10	90	120	22.6	15.0	12.5	12.0	8.9	8.5	210	50	110	110
12	110	140	37.3	21.0	20.7	16.8	14.7	12.0	270	60	140	130
16	128	170	57.9	39.0	32.1	31.2	22.9	22.2	360	70	180	230
20	170	220	85.5	61.0	47.4	48.8	33.8	34.8	420	90	210	310
24	210	270	118.8	88.0	65.9	70.4	47.0	50.2	480	110	240	390

### DEEP EMBEDMENT

Grade 5.8 Zinc Plated Studs Performance Data (C20/25 non-cracked concrete)

Thread Diam (d) mm	Minimum Hole Depth (h <sub>o</sub> ) mm	Minimum Concrete Thickness (h <sub>min</sub> ) mm	Characteristic Resistance kN		Design Resistance kN		Approved Resistance kN		Design Spacing (S) mm		Design Edge Distance (C) mm	
			Tensile (N <sub>st</sub> )	Shear (V <sub>st</sub> )	Tensile (N <sub>st</sub> )	Shear (V <sub>st</sub> )	Tensile (N <sub>st</sub> )	Shear (V <sub>st</sub> )	Tensile	Shear	Tensile	Shear
8	96	130	20.5	9.0	11.3	7.2	8.0	5.1	180	50	90	70
10	120	150	30.2	15.0	16.7	12.0	11.9	8.5	210	60	110	90
12	144	175	48.9	21.0	27.1	16.8	19.3	12.0	270	80	140	110
16	192	230	86.9	39.0	48.2	31.2	34.4	22.2	360	100	180	170
20	240	290	120.6	61.0	67.0	48.8	47.8	34.8	420	120	210	240
24	288	350	162.9	88.0	90.4	70.4	64.5	50.2	480	150	240	310





## SUPPLEMENTARY DATA

		INFLUENCE OF CONCRETE STRENGTH			
Concrete strength		C20/25	C30/37	C40/45	C50/60
Cylinder	N/mm <sup>2</sup>	20	30	40	50
Cube	N/mm <sup>2</sup>	25	37	50	60
Factor		1.0	1.12	1.19	1.30

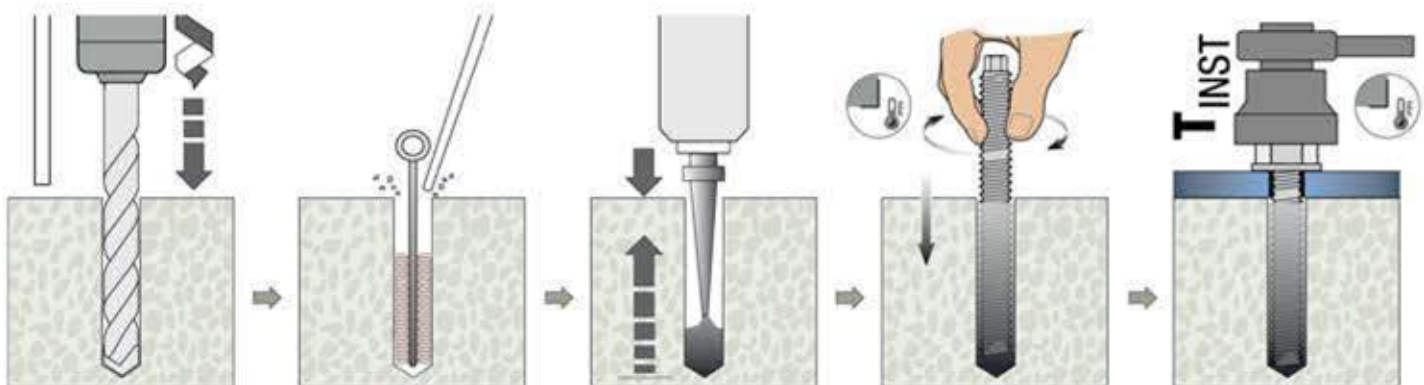
**Important Note:**

When using concrete factors ensure that loads do not exceed Steel Design Resistance.

STEEL DESIGN RESISTANCE FOR SINGLE ANCHOR							
Load Type	Steel Grade	Threaded Rod Size					
		M8	M10	M12	M16	M20	M24
Tensile (kN)	Stainless Steel Grade A4-70	13.7	21.6	31.1	57.9	90.5	130.0
	Grade 5.8	12.0	19.3	28.0	52.7	82.0	118.0
Shear (kN)	Stainless Steel Grade A4-70	8.3	12.8	19.2	35.3	55.1	79.5
	Grade 5.8	7.2	12.0	16.8	31.2	48.8	70.4

For variations in structure thickness, reduced spacing and edge calculations download the free **Anchor Calculation Program** from [www.jcpfixings.co.uk](http://www.jcpfixings.co.uk)

## INSTALLATION INSTRUCTIONS



-Drill correct diameter hole to corresponding depth

-Clean hole by brushing, blowing to remove drilling debris and dust:  
2xBlowing  
2xBrushing  
2xBlowing  
2xBrushing  
2xBlowing

-Attach nozzle to cartridge  
-Extrude first part to waste until an even colour is achieved  
-Fill hole 1/3 to 1/2 full starting from the bottom of the hole

-Insert stud into base material by hand using a twisting motion

-Allow resin to cure  
-Attach fixture  
-Tighten with torque wrench to recommended torque

