



Declaration of Performance




No. TCS20/2

1. Unique identification of the product type: **High-strength stud and nut assemblies for preloading with calibrated preload**
2. Type, batch or serial number or any other element allowing identification of the construction product as required under Article 11(4): **M20 high strength structural stud assemblies HRC. Lot number: see package labeling.**
3. Intended use or uses of the construction product, in accordance with the applicable harmonized technical specification, as foreseen by the manufacturer: **High-strength structural bolting assemblies for preloading with calibrated preload**
4. Name, registered trade name or registered trade mark and contact address of the manufacturer as required under Article 11(5):
Tension Control Bolts Ltd, TCB House, Clywedog Road South, Wrexham Industrial Estate, Wrexham, LL13 9XS, United Kingdom
5. Where applicable, name and contact address of the authorised representative whose mandate covers the tasks specified in Article 12(2): **Not relevant (see 4)**
6. System or systems of assessment and verification of constancy of performance of the construction product as set out in CPR, Annex V: **System 2+**
7. In case of the declaration of performance concerning a construction product covered by a harmonized standard: **Not relevant (see 8)**
8. In case of the declaration of performance concerning a construction product for which a European Technical Assessment has been issued: **Deutsches Institut für Bautechnik (DIBt) issued ETA 13/0244 on the basis of CUAP 06.02/17**
British Standards Institute (BSI) 0086-CPD performed the initial inspection of the manufacturing plant and of factory production control and the continuous surveillance, assessment and evaluation of factory production control and issued the certificate of conformity of the factory production control.
9. Declared performance:

Essential characteristics	Performance	Harmonised technical specification
Studs property class 10.9		
Tolerances on dimensions, form and position	Product grade C	CUAP 06.02/17 EN 14399-1:2005
Percent elongation after fracture	A% ≥ 9	
Minimum tensile strength	R _m ≥ 1 040 MPa	
Stress at 0,2 % non-proportional elongation	R _{p0,2} ≥ 940 MPa	
Stress under proof load	S _p of 830 MPa	
Strength under wedge loading	R _m ≥ 1 040 MPa	
Hardness	320 to 380 HV	
Impact strength	K _v ≥ 27 J at -20 °C	
Friction coefficient (k-class)	(see bolting assemblies)	
Release of dangerous substances	NPD	
Durability	NPD	
Nuts property class 10		
Tolerances on dimensions, form and position	Product grade B	CUAP 06.02/17 EN 14399-1:2005
Stress under proof load	1 245 MPa	
Hardness	272 to 353 HV	
Release of dangerous substances	NPD	
Durability	NPD	
Washers		
Tolerances on dimensions, form and position	Product grade A	CUAP 06.02/17 EN 14399-1:2005
Hardness	300 to 370 HV	
Release of dangerous substances	NPD	
Durability	NPD	
Bolting assemblies		
Suitability of assembly for preloading	K0	EN 14399-1:2005
Durability	NPD	

10. The performance of the product identified in points 1 and 2 is in conformity with the declared performance in point 9. This declaration of performance (DoP) is issued under the sole responsibility of the manufacturer identified in point 4.

Signed for and on behalf of the manufacturer by:

Signature.....
 Wrexham, United Kingdom, November 12th 2015
 Mr. T. Stokes, Managing Director