



**DECLARATION OF PERFORMANCE (DoP)**  
 according to Annex III of Regulation (EU) No. 305/2011  
 Construction Product Regulation (CPR)  
 for product  
**No. SZ-HV-10.9-2014**

1. Unique identification code of the product-type: **HV-10.9-K1**
2. Type, batch or serial number or any other element allowing identification of the construction product as required under Article 11(4):  
**SZ, ZERBST HV 10.9 (for bolts) / SZ HV 10 (for nuts) / SZ HV (for washers)**  
**System HV with hexagon bolts, nuts and plain chamfered washers**
3. Intended use or uses of the construction product, in accordance with the applicable harmonised technical specification, as foreseen by the manufacturer:

**High-strength structural bolting assemblies for preloading**

4. Name, registered trade name or registered trade mark and contact address of the manufacturer as required under Article 11(5):  
**SZ, ZERBST (for bolts) / SZ (for nuts and washers)**  
**Schraubenwerk Zerbst GmbH**  
**Altbuchsland 22**  
**D-39261 Zerbst/Anhalt**  
**Tel. +49 3923 713-0 Fax: +49 3923 713-200 Email: [info@schraubenwerk.de](mailto:info@schraubenwerk.de)**

5. Where applicable, name and contact address of the authorised representative whose mandate covers the tasks specified in Article 12(2):  
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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 harmonised standard:  
**The notified factory DVS Zert (Center for Welding-Related Instruction and Experimentation (SLV) Hannover, branch of the GSI mbH, Conformity Assessment Body 2451), performed the initial inspection of the manufacturing plant and of factory production control and the continuous surveillance, assessment and evaluation of factory production control according to System 2+ and issued the following:**

**Factory production control (FPC)**  
**2451 - CPR - EN15048 - 2013 - 0001.001**

8. Declared performance

Essential Characteristics	Performance	Harmonised technical specification
Tolerances on dimensions, form and position (bolts)	Product grade C (EN ISO 4759-1)	EN 14399-1:2005
Percent elongation after fracture (bolts)	A ≥ 9 %	
Minimum tensile strength (bolts)	R <sub>m</sub> ≥ 1040 MPa	
Lower yield strength or Stress at 0,2 % non-proportional elongation (bolts)	R <sub>p0,2</sub> ≥ 940 MPa	
Stress under proof load (bolts)	S <sub>p</sub> of 830 MPa	
Strength under wedge loading (bolts)	R <sub>m</sub> ≥ 1040 MPa	
Hardness (bolts)	≥ 320 HV and ≤ 380 HV	
Impact strength (bolts)	≥ 27 J at -20 °C	
Friction coefficient	NPD, see K1 per "suitability of assembly"	
Release of dangerous substances (bolts)	NPD	
Durability (bolts)	NPD	
Tolerances on dimensions, form and position (nuts)	Product grade B (EN ISO 4759-1)	
Stress under proof load (nuts)	S <sub>p</sub> of 1050 MPa for M12 and M16,	

Hardness (nuts)	1060 MPa for M20 to M36 ≥ 272 HV and ≤ 353 HV	
Release of dangerous substances (nuts)	NPD	
Durability (nuts)	NPD	
Tolerances on dimensions, form and position (washers)	Product grade A (EN ISO 4759-3)	
Hardness (washers)	≥ 300 HV and ≤ 370 HV	
Release of dangerous substances (washers)	NPD	
Durability (washers)	NPD	
Suitability of assembly for preloading (assemblies)	EN 14399-1, EN 14399-2 and EN14399-4 F <sub>bi,max</sub> ≥ 0,9 f <sub>ub</sub> A <sub>s</sub> Δθ Pass k-class K1: 0,10 ≤ k <sub>t</sub> ≤ 0,16	
Durability (assemblies)	NPD	

9. The performance of the product identified in points 1 and 2 is in conformity with the declared performance in point 8. This declaration of performance is issued under the sole responsibility of the manufacturer identified in point 4. Signed for and on behalf of the manufacturer by:

Dr.-Ing. Yulia Prilukova – Head of Quality Assurance

Zerbst, 24<sup>th</sup> of July 2014

Signature:

