

DB Systemtechnik GmbH • Frasenweg 20 - 36 • 34128 Kassel • Germany

HEICO Befestigungstechnik GmbH
Technical Sales / Marketing
Mr. Sven Schierz
Ensestraße 1-9

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Your ref. T.TVI43 DA

November 11, 2014

Application of HEICO LOCK at Deutsche Bahn AG

Dear Mr. Schierz,

I hereby confirm to HEICO Befestigungstechnik GmbH that the wedge lock washer pairs made of coated, unalloyed steel and of stainless steel (1.4404) to be used as loosening protection for bolted fastening applications according to DIN 25201-4 correspond to the technical requirements of Deutsche Bahn.

Until further notice, application of HEICO-LOCK wedge lock washers will be in rough compliance with the DB standard BN 208010 for bolt securing systems and includes wedge lock washer pairs in sizes between M3 and M30, made of steel and stainless steel for indoor and outdoor use.

Explanation:

The wedge lock washers by HEICO Befestigungstechnik GmbH specified above have been tested by two independent institutions¹ within the scope of inspection of loosening protection for bolted fastening applications according to DIN 25201-4.

¹ Cologne University of Applied Sciences, Prof. Dr.-Ing. Max Klöcker, subject area of drive and transport technology, steel engineering and structural analysis
IMA Dresden, IMA Metallforschung und Anwendungstechnik GmbH, Dr.-Ing. Bernd Donat



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BIC: PBNKDEFF

All wedge lock washer types and versions tested

Steel type:

HLS 8	(M8)	Zinc ribs, coated	(Delta Protect KL 100)
HLS 30	(M30)	Zinc ribs, coated	(Delta Protect KL 100)

Stainless steel type:

HLS 8 S	(M8)	Stainless steel 1.4404	(X2CrNiMo17-12-2)
HLS 10 S	(M10)	Stainless steel 1.4404	(X2CrNiMo17-12-2)
HLS 12 S	(M12)	Stainless steel 1.4404	(X2CrNiMo17-12-2)
HLS 16 S	(M16)	Stainless steel 1.4404	(X2CrNiMo17-12-2)

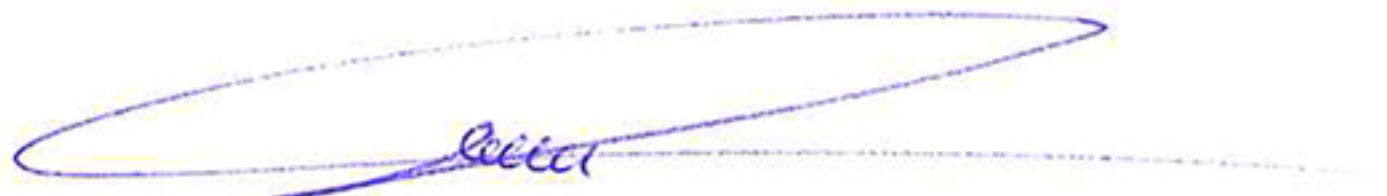
have fulfilled the specified requirements under the testing conditions agreed with DB. The implemented tests were vibration tests (also referred to as shaking test) according to testing conditions based on the draft standard E DIN 25201-4;2010-03/2/ carried out on testing equipment according to DIN 65 151 /3/.

The securing function according to DIN 25201-4 'Securing of bolted joints, measures to prevent characteristic loosening' was considered effective after the tests performed and can be regarded as representative for an entire range in sizes between M3 and M30.

Best regards

DB Systemtechnik GmbH

p.p.



11.11.2014. Oliver Danuschewski