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HUCK[®]

It's Official: Alcoa Fastening Systems Huck BobTail Offers Maintenance Free Joints

The Huck BobTail® 12,14,16, 20mm and 1inch diameters, after lengthy and vigorous independent testing, has gained the prestigious Allgemeine bauaufsichtliche Zulassungen (**German national technical approval**) from the world renowned DIBt (Deutsches Institut für Bautechnik) for use in both static and dynamic applications in civil engineering.



Futhermore, the approval concludes that retorque/retension of an installed Huck BobTail LockBolt is not possible and **also not necessary and connections do not require maintenance regarding preload.**

Thus joints fastened together by BobTail large diameter LockBolts, within the range specified, are **maintenance free.**

About DIBt

Deutsches Institut für Bautechnik (DIBt) is an institute of the German Federal and Laender Governments for a uniform fulfilment of technical tasks in the field of public law.

Its tasks in particular include:

- Granting of European technical approvals for construction products and systems
- Granting of Allgemeine bauaufsichtliche Zulassungen (German national technical approvals) for construction products and types of construction
- Recognition of testing laboratories, inspection bodies and certification bodies for tasks within the framework of the Ü-Zeichen ('Ü mark') and the CE marking of construction products

Allgemeine bauaufsichtliche Zulassungen (German national technical approvals) are granted for such construction products and types of construction for which there are no generally acknowledged rules of technology, DIN standards in particular, or which deviate considerably from these. They are reliable verifications of applicability of construction products and verifications of applicability of types of construction relating to requirements of construction works in the field of construction engineering.

Allgemeine bauaufsichtliche Zulassungen (German national technical approvals) are granted as a verification of "applicability" of construction products if they do not yet bear the CE marking according to the Construction Products Directive and which are not regulated by German standards or regulations either (non-regulated products and types of construction). Allgemeine bauaufsichtliche Zulassungen (German national technical approvals) granted by Deutsches Institut für Bautechnik are valid in all the Laender of the Federal Republic of Germany only.

Deutsches
Institut
für
Bautechnik

DIBt

Procuring the Huck BobTail DIBt Approval

A copy of the controlled approval document in German can be purchased directly from the DIBt official website (www.dibt.de).

Registration is necessary to ensure the purchaser is kept up to date with any changes to the approval. After entering the website use the search function to find Z-14.4-591.

The English version is not a controlled copy, i.e. the German original may change and this English translation would not automatically be updated. As it is an uncontrolled copy it is available from AFS Telford, via the Engineering Dept'. A request must be submitted and the final recipient defined, the Engineering Dept' will then issue the uncontrolled copy and keep a register of those in receipt.

After entering the website use the search function to find Z-14.4-591

Huck BobTail DIBt Approval

APPROVAL NUMBER Z-14.4-591

Valid from 4 November 2011 to 4 November 2016

The testing and validation of test results are carried out independently of each other and the DIBt, to ensure the impartiality and integrity of the approval process.



The results of the testing have been calculated to meet the needs of both **DIN EN 1993 (EURO Code 3 – Design of Steel Structures)** and **DIN 18800-1 (Steel Structures – Design and Construction)** and cover:

DIN EN 1993 (EURO Code 3 – Design of Steel Structures)

- Characteristic value of shear resistance (F_v, R_k)
- Characteristic value of tension resistance (F_t, R_k)
- Characteristic preload (F_p, C^*)

DIN 18800-1 (Steel Structures – Design and Construction)

- Characteristic value of shear resistance (V_a, R_k)
- Characteristic value of tension resistance (N_R, k)

Mechanical Values of the Huck BobTail LockBolt

Nominal Diameter	Fv,Rk [KN]	Ft,Rk [KN]	Fp,C* [KN]	Va,R,k [KN]	NR,k [KN]	As [mm ²]
M12	74,6	89,8	64,7	74,6	79,8	92,5
M14	98,0	118,4	88,3	98,0	105,3	126,1
M16	127,5	151,9	114,5	127,5	135,0	163,5
M20	204,6	233,5	179,3	204,6	207,5	256,2
Ø 25, 4 (1")	347,0	374,3	293,1	347,0	332,7	418,7

Fv,Rk Characteristic value of shear resistance

Ft,Rk Characteristic value of tension resistance

Fp,C* Characteristic preload

Va,R,k Characteristic value of shear resistance

NR,k Characteristic value of tension resistance

As Tensile stress area

Service and Maintenance

As it's such an important part of the approval, the following text is exact wording taken from the Approval Document:

SECTION 5 OF DIBt APPROVAL

Provision for service and maintenance

Accordingly executed connections with LockBolts (e.g. direct contact of structural parts, no unsuitable coating) **do not require maintenance regarding preload.** Possible incorrect installed or damaged LockBolts shall be replaced.

Additional Information

Additional rules/guidelines are included in the approval pertinent to use in wind energy plants.

As expected the approval documents the need for trained staff to use Huck tooling to install the fasteners, and lists checks post installation and corrective methods if the fastener is not installed properly.



BobTail Removal

A quick change of nose assembly from the installation nose to the cutter nose enables removal of BobTail fasteners using the same tooling system without any damage to the materials being joined.

Part Numbers

Due to the verification of conformity requirement, the products included in the approval have specific part numbers. This ensures that when the products are ordered they meet the DIBt approval standard.

DB12112 (pin) DB12012 (collar)	12mm
DB12114 (pin) DB12014 (collar)	14mm
DB12116 (pin) DB12016 (collar)	16mm
DB12120 (pin) DB12020 (collar)	20mm
DB12126 (pin) DB12026 (collar)	25.4mm/1inch

Example of Co-ordination Drawing shown below:

UNCONTROLLED DOCUMENT

IDENTIFICATION
 HUCK MARK, CLASS 10.9 MARK, & GRIP NUMBER (20 IS EXAMPLE)
 PIN: DB12112-(GRIP NUMBER) (FINISH CODE)
 Example: DB12112-20J45

IDENTIFICATION
 COLLAR: DB12012 (FINISH CODE)
 Example: DB12012J46
 (6) EQUALLY SPACED BUMPS AND 2 HUCK MARKS AS SHOWN

DETAIL "A"
 MINIMUM OF 1 BUMP CREASE ON COLLAR FLANGE INDICATES FULL SWAGE.
 NOTE: ONLY 14.1 MIN. SWAGE LENGTH REQUIRED TO MEET MIN. VALUES.

APPROVED FINISH CODES

PIN	COLLAR
J45	J46
J57	J58

MINIMUM INSTALLED VALUES

CLAMP:	64.9 kN
TENSILE:	87.7
SHEAR:	65.4

MAXIMUM HOLE SIZE
 $\phi 13.5$

PIN PART NUMBER	GRIP NUMBER	"A"	"B"	GRIP RANGE	COLLAR PART NUMBER
DB12112	10	3.8	34.2	5-15	DB12012
DB12112	15	3.8	39.2	10-20	DB12012
DB12112	20	3.8	44.2	15-25	DB12012
DB12112	25	3.8	49.2	20-30	DB12012
DB12112	30	3.8	54.2	25-35	DB12012
DB12112	35	3.8	59.2	30-40	DB12012
DB12112	40	3.8	64.2	35-45	DB12012
DB12112	45	3.8	69.2	40-50	DB12012
DB12112	50	3.8	74.2	45-55	DB12012
DB12112	55	3.8	79.2	50-60	DB12012
DB12112	60	3.8	84.2	55-65	DB12012
DB12112	65	3.8	89.2	60-70	DB12012
DB12112	70	3.8	94.2	65-75	DB12012
DB12112	75	3.8	99.2	70-80	DB12012
DB12112	80	9.5	104.2	75-85	DB12012

COORDINATION DRAWING FOR DIBT APPROVED PARTS:
 DB12112 PIN & DB12012 COLLAR
 $\phi 12.0$ BOBTAIL GRADE 10.9

MATERIAL:
 PIN: MEDIUM CARBON STEEL
 COLLAR: LOW CARBON STEEL

SCALE:
 1X

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 Drawing Number: 12655-3

ISS	DESCRIPTION	DRAWN	CHECKED	APPROVED	DATE
02	J57 and J58 Finish Codes Added	GPJ			9/02/12
01	FIRST ISSUE	GPJ			4/08/11

ALL DIMENSIONS IN MILLIMETRES

Delivery sheets will be marked with conformity mark Ü (Ü-mark) in accordance with the decrees on conformity marking of Germany.

Coating

Standard coating on the approved products are J45 (Pin) /J46 (Collar) which is equivalent to C4 (typical environments Industrial and Coastal, Chemical Processing Plants) in ISO 12944 - <http://www.international-pc.com/markets/infrastructure/Documents/iso-12944.pdf>

Whilst AFS do not offer a specific corrosion guarantee for each of these coatings, we are able to show through extensive testing that the following figures can be expected, providing the fastener is installed correctly.

All testing was carried out by an independent 3rd party testing facility at Institut für Korrosionsschutz (Institute for Corrosion Protection) Dresden. Both are Silver-Grey in appearance.

J45 / J46

- Corrosion resistant to 720hrs ISO9227 NSS (ISO12944 – C4) Installed
- 1440hrs Uninstalled, performance as stated by platers

J57 / J58

- Corrosion resistant to 1440hrs ISO9227 NSS (ISO12944 – C5 M High) Installed
- 2000hrs Uninstalled, performance as stated by platers

J57/J58

- Is currently under final evaluation for inclusion into DIBt Huck Bobtail standard



Next Step

After J57/J58 is included, the next step will be to pursue ETA accreditation which will extend the approval across Europe. http://dibt.de/en/zulassungen_eta_with_guideline.html

AFS is currently working with the DIBt to revise its current blind fastener approval to accommodate a wider range of blind fasteners – Magna-Lok – 3/16" up to 1/2" and Magna-Bulb 3/16" up to 5/16".

Contact

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