Hollo-Bolt® by lindapter

Technical Bulletin

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The loads illustrated below are for use when designing a connection to a specific design code, they apply, in both tensile and shear, to the Hollo-Bolt assembly only. It is important to realise that in any connection detail the design resistance of the connection may be limited to a lesser value by the structural components that are connected. For example, when the thickness of the connected component is small, pull out failure may occur before the failure of the Hollo-Bolt. Design checks should be carried out on the section member to determine the static design resistance by a qualified Structural Engineer.

Load and Resistance factor design (LRFD)

The LRFD allowable loading figures are taken from the ICC-ES approval report ESR-3330 for Hollo-Bolts and have been converted from lbs to kN. These figures are in accordance with ICC-ES acceptance criteria AC-437: 'Expansion bolts in structural steel connections' and have been determined from tests performed at an independent ISO 17025 accredited test laboratory.

	LRFD Method	
Product Code	Tensile (kN) Ø=0.51	Shear (kN) Ø=0.5
HB08	16.79	14.30
HB10	27.40	24.40
HB12	38.01	33.29
HB16	61.90	51.80
HB20	88.90	81.80

They apply to Hollo-Bolts in sleeve lengths 1, 2 and 3 and in hot dip galvanised finish only. The LRFD figures are suitable for use when designing to the AISC Steel Construction Manual and AS 4100.

Characteristic Resistances

The characteristic resistances are taken from ETA-10/0416 and are for use when designing bolted connections to Eurocode 3. The characteristic resistances are used to determine the design resistance $F_{t,Rk}$ and $F_{v,Rk}$ for the Hollo-Bolt. The design resistance is calculated by dividing the characteristic value by a partial factor γm2 (1.25 in UK, France, Germany and Italy), this is a nationally determined parameter.

	Carbon Steel		Stainless Steel	
Product Code	Tensile $F_{t,Rk}$ (kN)	Shear $F_{v,Rk}$ (kN)	Tensile $F_{t,Rk}$ (kN)	Shear $F_{v,Rk}$ (kN)
HB08	23.1	32.9	26.8	30.7
HB10	39.6	54.2	46.0	51.0
HB12	45.8	71.0	53.3	65.0
HB16	84.3	139.0	98.0	128.0
HB20	124.0	211.0	154.0	205.0

The characteristic resistances apply to Hollo-Bolts in lengths 1, 2 and 3, with standard Hexagon, Countersunk, Flush Fit and Button Head, in all finishes as specified in the ETA. The resistances have been calculated according to Eurocode 3 and verified by test. The results have been evaluated and verified by an independent technical assessment body.

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