##### **Supply and placing of VT-Shearhead**

*Sample tender text*

**1. Supply of VT-Shearhead**

**VT-Shearhead** is a steel construction for column head widening inside the reinforced concrete slab or column base widening inside the reinforced concrete base plate to increase the punching shear resistance.

Surface protection: Parts embedded in concrete raw

Fire resistance: R90

Statics and workshop plans:

The static proofs of the VT-Shearhead are provided in a verifiable form by VTG Verbund-Technik GmbH. The costs for statics and workshop plans are to be included in the unit prices.

##### If necessary, additional shear reinforcements are to be included in the unit prices for the purpose of a complete solution.

##### Design, manufacture and supply of VT-Shearhead by:

VTG Verbund-Technik GmbH

Rather Strasse 25

D-40476 Düsseldorf

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##### www.verbund-technik.com

**1.10 VT-Shearhead type VT-H1**

VT-Shearhead location Slab / base plate

Column position Edge

Dimensions of column a/b or Ø

Slab thickness h = 30 cm

Effective depth d= 24 cm

Slab concrete quality C30/37

Total surface design load of slab pEd = 15.0 kN / m2

Punching design load max. VEd = 1’500 kN
Amplification factor β = 1.10

for asymmetric loading

Req. longitudinal reinforcement ρl = 1.5 %

ratio due to punching

Slab openings in the none / yes, see details

punching relevant area

Edge distance rx = 60 cm

Shear force per VT-Shearhead edge VEd II, (li) = 156 kN; VEd II, (re) = 140 kN

 VEd, ⊥ = 220 kN

Incl. static calculations (punching proof and VT-Shearhead design)

Incl. required additional shear reinforcement outside the VT-Shearhead

Including workshop plans of the VT-Shearhead

**1 piece UP: € ................. TP: € .................**

**2. Placing of VT-Shearhead**

Incl. unloading and placing

Max. weight Approx. ...............to / piece

**1 piece UP: € ................. TP: € .................**