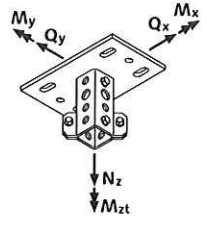
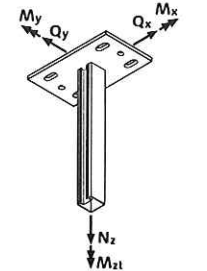
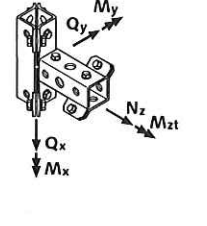
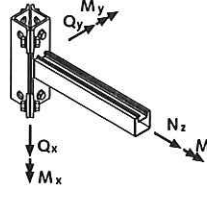


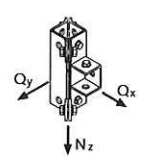
Allowable loads under "normal operating conditions"
in accordance with type testing to EN 13480-3:2012 (harmonised norm relating to pressure equipment directive 2014/68/EU)

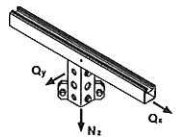
1/2

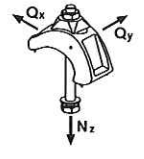
Component	$\pm Q_x$ [kN]	$\pm Q_y$ [kN]	$\pm N_z$ [kN]	$\pm M_x$ [kNm]	$\pm M_y$ [kNm]	$\pm M_{zt}$ [kNm]
HCS-VT 63-11, -12, -13 	-	6	-	105	-	-
	6	-	-	-	105	-
	-	-	-	-	-	85
	-	-	7	-	-	-
	-	5	7	100	-	-
	5	-	7	-	100	-
	5	2	6	90	-	-
	2	5	6	-	90	-
HCS-VT 63-14, -15, -16 	-	3	6	85	-	30
	3	-	6	-	85	30
	3	3	6	55	-	30
	3	3	6	-	55	30
	2.5	2.5	6	50	50	-
	2	2	6	30	50	30
	2	2	6	50	30	30
	-	3	7	55	-	50
	3	-	7	-	55	50

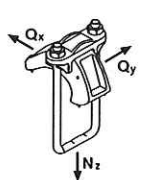
Component	$\pm Q_x$ [kN]	$\pm Q_y$ [kN]	$\pm N_z$ [kN]	$\pm M_x$ [kNm]	$\pm M_y$ [kNm]	$\pm M_{zt}$ [kNm]
HCS-VT 63-21 	-	6	-	55	-	-
	6	-	-	-	105	-
	-	-	-	-	-	85
	-	-	7	-	-	-
	-	5	7	50	-	-
	5	-	7	-	100	-
	2	5	6	45	-	-
	5	2	6	-	90	-
	-	3	6	40	-	40

Component	$\pm Q_x$ [kN]	$\pm Q_y$ [kN]	$\pm N_z$ [kN]	$\pm M_x$ [kNm]	$\pm M_y$ [kNm]	$\pm M_{zt}$ [kNm]
HCS-VT 63-41 	3	-	6	-	75	40
	3	3	6	30	-	30
	3	3	6	-	55	30
	2.5	2.5	6	25	50	-
	2	2	6	15	50	30
	2	2	6	30	20	30
	-	2.5	7	40	-	40
	3	-	7	-	55	50

Component	$\pm Q_x$ [kN]	$\pm Q_y$ [kN]	$\pm N_z$ [kN]
HCS-VT 63-22 	-	-	4.5
	-	4	-
	4	-	-
	Q _{res} = 4		4.5

Component	$\pm Q_x$ [kN]	$\pm Q_y$ [kN]	$\pm N_z$ [kN]
HCS-VT 63-31 	-	-	7
	-	2.5	-
	2.5	-	-
	Q _{res} = 2.5		7

Component	$\pm Q_x$ [kN]	$\pm Q_y$ [kN]	$\pm N_z$ [kN]
HCS TK-L 	-	-	6
	-	1.2	4
	1.2	-	4
	Q _{res} = 1.2		4

Component	$\pm Q_x$ [kN]	$\pm Q_y$ [kN]	$\pm N_z$ [kN]
HCS TK 63 	-	-	5
	-	0.9	3
	0.9	-	3
	Q _{res} = 0.9		3

Supplementary considerations:

For components HVT 63-11 to HVT 63-16, the allowable loads are assumed to act at the intersection of the channel system line with the building surface. In the case of components HVT 63- 21 to HVT 63-41, the allowable loads are assumed to act at the intersection of the channel lines of the connected components.

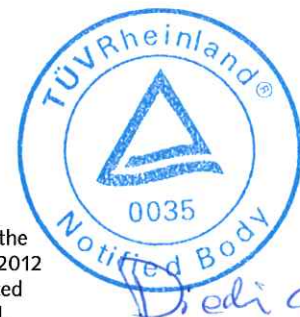
The allowable loads for the TK-L clamps relate to the connection of the Powerclick base plate components (HVT 63-11 to HVT 63-16) and other similar, galvanised baseplates (material grade S 235) to galvanised steel profiles (material grade S 235) with flange thickness between 5 and 40mm. When using the TK-63 clamps, the HZL 63/63 channel will be perpendicular to the steel support, and the channel slot must either directly face the steel, or face away from it, not be positioned at 90°.

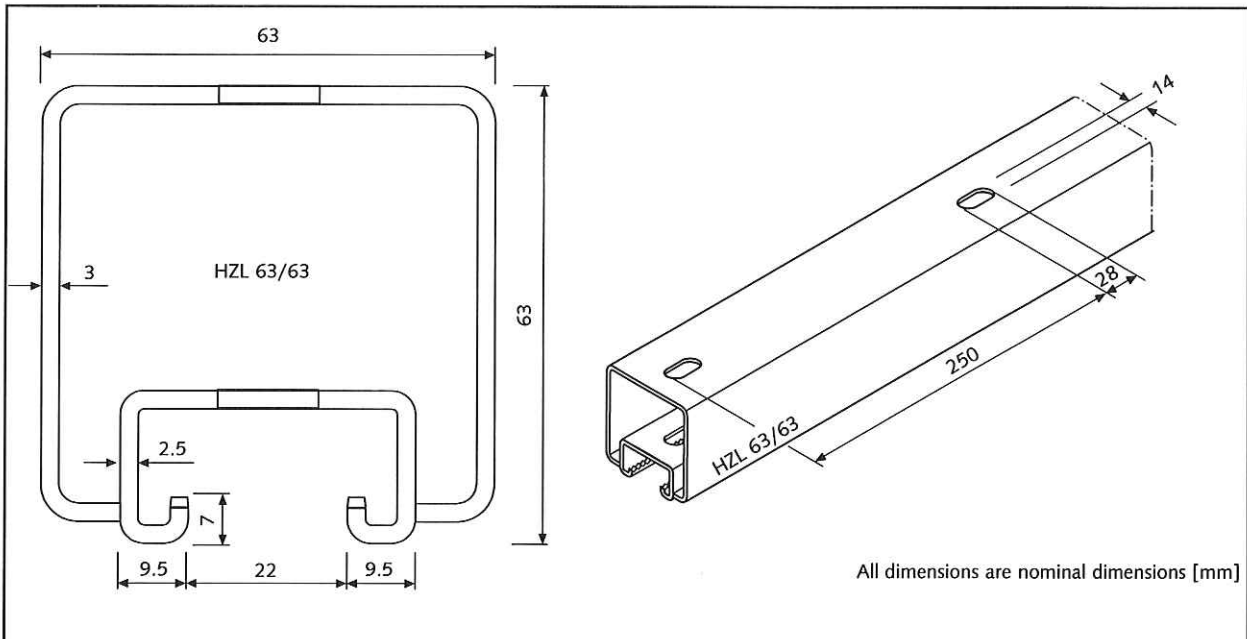
Testing has shown safety factors of 1.6 for yield and 4.0 for the ultimate failure for the Powerclick components. The allowable loads can therefore also be applied in the case of "normal operating conditions"* , following structural confirmation of the attachment components to regulations with comparable safety factors, e.g. DIN EN 1993, AD 2000 ...

In the case of "occasional operating conditions"* the allowable loads can be increased in line with the applicable regulations. For example, on structural confirmation of the components to EN 13480-3:2012 and in the event of "occasional operating conditions" [see EN 13480-3:2012, 4.2.5], the above listed allowable loads may be multiplied by a factor of 1.2 [see EN 13480-3:2012, 13.3.6.3 and Annex J].

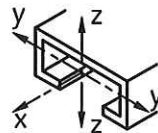
*taken from english standard

Tested to EN 13480-3:2012





Material	S 235 JR in accordance with EN 10025	
Profile weight	G [kg/m]	6.20
Cross-sectional area	A [cm ²]	7.09
Surface enclosed by the cross-sectional centre-line	A _m [cm ²]	28.31
Moment of inertia	I _y [cm ⁴]	33.08
	I _z [cm ⁴]	42.95
	I _T ¹⁾ [cm ⁴]	36.13
Moment of resistance	W _y [cm ³]	10.06
	W _z [cm ³]	13.63



1) unperforated channel cross-section

Supplementary considerations:

To confirm the **load-bearing capacity** of a HALFEN Powerclick System 63 support system the following steps are required:

1. Calculate the relevant **resultant loads and moments** in the support system.
2. Confirm that the resultant loads and moments are less than the listed allowable loads for **Powerclick System 63 components**.
3. Confirm that the **components connecting** the support system to the building are adequate.
 The stress on the connection components is calculated on the basis of the resultant loads calculated in step 1.
 In the case of Powerclick support-bases connected to the structure by means of site drilled bolts or bolt connections, the forces act along the axis of the fixing. In the case of beam clamp connections, the clamp force acts at the point of contact between the clamp and the building structure.
4. Confirm that the **supporting structure of the building** can take the loads imposed on it.

In the making of connections in which the HZL 63/63 channel runs through both the shell-halves of a connection component (e.g. HVT 63-22), care should be taken to ensure that the end of the channel projects out of the connection component by at least 3 cm.

Tested to EN 13480-3:2012

In the making of connections in which the HZL 63/63 channel is inserted into both shell-halves of a connection component (e.g. HVT 63-11), care should be taken to ensure that the channel is pushed in as far as it will go.

The following torques should be applied:

Screw fittings in channel slot	60 Nm
Fittings	70 Nm
Beam clamp TK-L	90 Nm
Beam clamp TK-63	45 Nm

