



DISSIPATIVE STEEL BRACES **HBF**

The HBFs are Nonlinear Devices (NLD) to be inserted into new or existing bracing systems to give them dissipative behavior.

DISSIPATIVE STEEL BRACES HBF

Dissipative bracings are mainly used for the seismic retrofitting of existing buildings. This passive protection method enhances the structure's resistance and stiffness. It involves adding braces to the structural frame, which terminate in a plate with specific hysteretic behaviour and dissipative capacity. This plate, known as HBF, allows for small axial displacements, dissipating energy through material yielding.

This type of retrofit is generally non-invasive as the elements are placed within the frame meshes. HBF can be left exposed or covered by panels. Replacement after a seismic event is simple and cost-effective; it will suffice to leave an access in the wall and replace only the dissipative element, without further interventions on the structure or the bracing.

The device consists of a single plate, or a pair of plates connected to one end of the brace. These plates are designed and manufactured to appropriately concentrate inelastic deformations in specific areas, effectively dissipating energy. The HBFs are made of S355J2 steel, compliant with EN 10025, and the anti-corrosive protection is achieved through hot-dip galvanization.

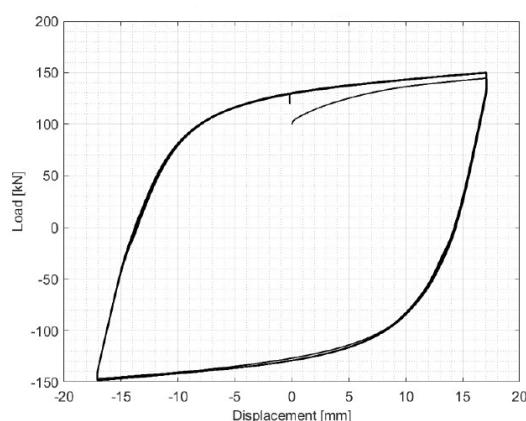
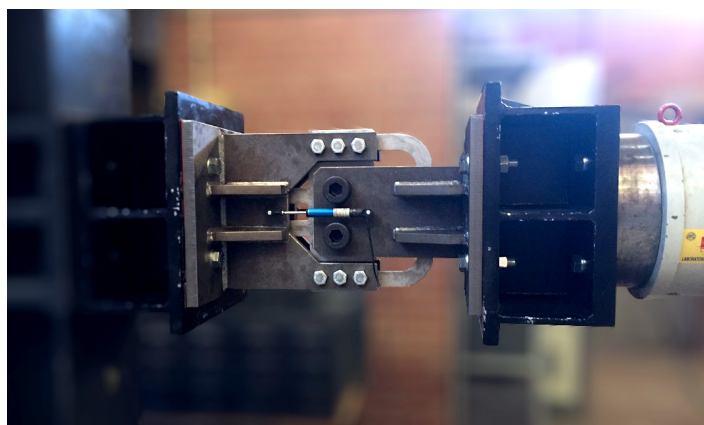
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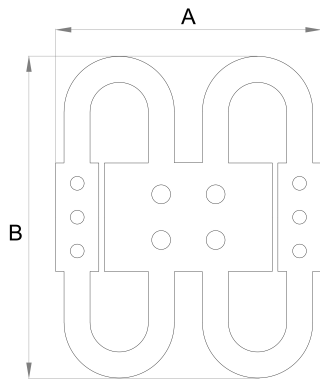
HBF 160/40

Device with 160 kN of ultimate load at +/- 20 mm of ultimate displacement

 2204-CPR-0978.1		DISPOSITIVE TYPE	YEAR	JOB	RANK	F ₁ [kN]	d ₁ [mm]
		DISPOSITIVE CODE	ORDER	SERIAL NUMBER		F ₂ [kN]	d ₂ [mm]

 HBF devices are CE marked according to EN 15129





DIMENSIONS AND PERFORMANCE CHARACTERISTICS

F₁ yielding strength
K_e equivalent stiffness
d₁ yielding displacement
F₂ ultimate strength
d₂ ultimate displacement

F_y first yield strength
d_y first yield displacement
n number of elastoplastic elements
A transversal dimension
B axial dimension

ID	F ₁ [kN]	K _e [kN/mm]	d ₁ [mm]	F ₂ [kN]	d ₂ [mm]	F _y [kN]	n [-]	A [mm]	B [mm]
HBF 160/30	140	10.67	0.77	160	15	107	1	365	455
HBF 195/30	170	13	0.86	195	15	130	1	365	457
HBF 300/30	250	20	0.88	300	15	196	1	365	475
HBF 345/30	300	23	0.76	345	15	230	1	365	503
HBF 390/30	340	26	0.83	390	15	261	1	365	507
HBF 440/30	390	29.33	0.83	440	15	300	1	365	557
HBF 480/30	430	32	1.02	480	15	330	1	365	579
HBF 600/30	500	40	0.88	600	15	384	2	365	475
HBF 690/30	600	46	0.76	690	15	461	2	365	503
HBF 780/30	680	52	0.83	780	15	523	2	365	507
HBF 880/30	780	58.67	0.83	880	15	600	2	365	557
HBF 960/30	860	64	1.02	960	15	661	2	365	579
HBF 160/40	140	8	1.02	160	20	107	1	365	463
HBF 195/40	170	9.75	1.14	195	20	130	1	365	483
HBF 300/40	250	15	1.17	300	20	192	1	365	517
HBF 345/40	300	17.25	1.01	345	20	230	1	365	525
HBF 390/40	340	19.5	1.11	390	20	261	1	365	563
HBF 440/40	390	22	1.10	440	20	300	1	365	625
HBF 480/40	430	24	1.36	480	20	330	1	365	659
HBF 600/40	500	30	1.17	600	20	384	2	365	517
HBF 690/40	600	34.5	1.01	690	20	461	2	365	525
HBF 780/40	680	39	1.11	780	20	523	2	365	563
HBF 880/40	780	44	1.10	880	20	600	2	365	625
HBF 960/40	860	48	1.36	960	20	661	2	365	659

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