




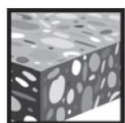
## • مشخصات فنی انکر بولت های HST

تنظیم و ارائه شرکت آرمان سازان

منبع: WWW.HILTI.COM

انواع، مزایا و شکل ظاهری

Anchor version	Benefits
 HST Carbon steel	<ul style="list-style-type: none"> <li>- suitable for non-cracked and cracked concrete C 20/25 to C 50/60</li> <li>- quick and simple setting operation</li> <li>- safety wedge for certain follow up expansion</li> </ul>
 HST-R Stainless steel	
 HST-HCR High corrosion resistance	



Concrete



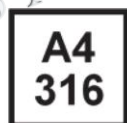
Tensile zone



Fire resistance



Shock



Corrosion resistance



High corrosion resistance



European Technical Approval



CE conformity



Hilti anchor design software

## • تاییده و استانداردها

Description	Authority / Laboratory	No. / date of issue
European technical approval <sup>a)</sup>	DIBt, Berlin	ETA-98/0001 / 2009-07-07
Shockproof fastenings in civil defence installations	Bundesamt für Zivilschutz, Bern	BZS D 08-602 / 2008-12-15
Fire test report	DIBt, Berlin	ETA-98/0001 / 2009-07-07
Fire test report ZTV-Tunnel	IBMB, Braunschweig	UB 3332/0881-2 / 2003-07-02
Assessment report (fire)	warringtonfire	WF 166402 / 2007-10-26

a) All data given in this section according ETA-98/0001, issue 2009-07-07.

• مقاومت نهایی:

Anchor size	Non-cracked concrete						Cracked concrete					
	M8	M10	M12	M16	M20	M24	M8	M10	M12	M16	M20	M24
Tensile $N_{R,u,m}$												
HST [kN]	16,6	22,3	35,2	48,7	76,0	86,1	10,3	11,6	21,9	31,1	44,9	60,2
HST-R [kN]	18,1	26,7	35,1	49,8	77,4	79,1	12,7	18,4	20,1	36,0	55,1	70,5
HST-HCR [kN]	15,2	22,7	32,4	45,5	-	-	13,8	16,2	21,5	32,4	-	-
Shear $V_{R,u,m}$												
HST [kN]	17,6	27,8	40,5	67,8	102,9	112,3	17,6	27,8	40,5	67,8	102,9	112,3
HST-R [kN]	15,8	24,4	35,4	61,2	95,6	137,7	15,8	24,4	35,4	61,2	95,6	137,7
HST-HCR [kN]	17,6	27,8	40,5	75,4	-	-	17,6	27,8	40,5	75,4	-	-

• مقاومت طراحی

Anchor size	Non-cracked concrete						Cracked concrete					
	M8	M10	M12	M16	M20	M24	M8	M10	M12	M16	M20	M24
Tensile $N_{R,d}$												
HST [kN]	5,0	10,7	13,3	23,3	33,3	40,0	2,8	6,0	8,0	13,3	20,0	26,7
HST-R [kN]	6,0	10,7	13,3	23,3	33,3	40,0	3,3	6,0	8,0	16,7	20,0	26,7
HST-HCR [kN]	6,0	10,7	13,3	23,3	-	-	3,3	6,0	8,0	16,7	-	-
Shear $V_{R,d}$												
HST [kN]	11,2	18,8	28,0	44,0	67,2	62,7	11,2	18,8	28,0	44,0	60,9	62,7
HST-R [kN]	10,4	16,0	24,0	38,5	41,7	55,6	10,4	16,0	24,0	35,6	41,7	55,6
HST-HCR [kN]	10,4	16,0	24,0	44,0	-	-	10,4	16,0	24,0	35,6	-	-

• مقاومت توصیه شده:

Anchor size	Non-cracked concrete						Cracked concrete					
	M8	M10	M12	M16	M20	M24	M8	M10	M12	M16	M20	M24
Tensile $N_{rec}^a)$												
HST [kN]	3,6	7,6	9,5	16,7	23,8	28,6	2,0	4,3	5,7	9,5	14,3	19,0
HST-R [kN]	4,3	7,6	9,5	16,7	23,8	28,6	2,4	4,3	5,7	11,9	14,3	19,0
HST-HCR [kN]	4,3	7,6	9,5	16,7	-	-	2,4	4,3	5,7	11,9	-	-
Shear $V_{rec}^a)$												
HST [kN]	8,0	13,4	20,0	31,4	48,0	44,8	8,0	13,4	20,0	31,4	43,5	44,8
HST-R [kN]	7,4	11,4	17,1	27,5	29,8	39,7	7,4	11,4	17,1	25,5	29,8	39,7
HST-HCR [kN]	7,4	11,4	17,1	31,4	-	-	7,4	11,4	17,1	25,5	-	-

a) With overall partial safety factor for action  $\gamma = 1,4$ . The partial safety factors for action depend on the type of loading and shall be taken from national regulations. According ETAG 001, annex C, the partial safety factor is  $\gamma_G = 1,35$  for permanent actions and  $\gamma_Q = 1,5$  for variable actions.

مشخصات مکانیکی انکر بولت ها:

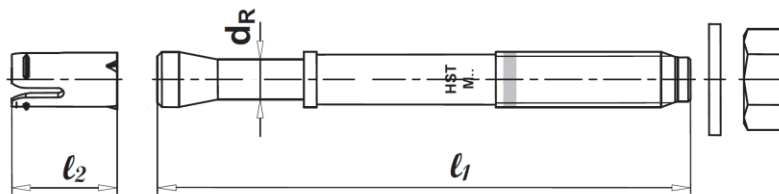
Anchor size		M8	M10	M12	M16	M20	M24
Nominal tensile strength $f_{uk}$	HST [N/mm <sup>2</sup> ]	800	800	800	720	700	530
	HST-R [N/mm <sup>2</sup> ]	720	700	700	650	650	650
	HST-HCR [N/mm <sup>2</sup> ]	800	800	800	800	-	-
Yield strength $f_{yk}$	HST [N/mm <sup>2</sup> ]	640	640	640	580	560	451
	HST-R [N/mm <sup>2</sup> ]	575	560	560	500	450	450
	HST-HCR [N/mm <sup>2</sup> ]	640	640	640	640	-	-
Stressed cross-section $A_s$	[mm <sup>2</sup> ]	36,6	58,0	84,3	157	245	353
Moment of resistance W	[mm <sup>3</sup> ]	31,2	62,3	109,2	277,5	540,9	935,5
Char. bending resistance $M_{Rk,s}^0$	HST [Nm]	30	60	105	240	454	595
	HST-R [Nm]	27	53	92	216	422	730
	HST-HCR [Nm]	30	60	105	266	-	-

مواد و ابعاد انکر بولت ها

Part	Material	
Bolt	HST	Carbon steel, galvanised to min. 5 $\mu$ m
	HST-R	Stainless steel
	HST-HCR	High corrosion resistant steel

Anchor dimensions

Anchor size		M8	M10	M12	M16	M20	M24
Minimum thickness of fixture	$t_{fix,min}$ [mm]	2	2	2	2	2	2
Maximum thickness of fixture	$t_{fix,max}$ [mm]	195	200	200	235	305	330
Shaft diameter at the cone	$d_R$ [mm]	5,5	7,2	8,5	11,6	14,6	17,4
Minimum length of the anchor	$l_{1,min}$ [mm]	75	90	115	140	170	200
Maximum length of the anchor	$l_{1,max}$ [mm]	260	280	295	350	450	500
Length of expansion sleeve	$l_2$ [mm]	14,8	18,2	22,7	24,3	28,3	36



شرکت آرمان سازان با استفاده از مدرنترین نرم افزارهای تخصصی آماده ارائه مشاوره در زمینه انتخاب مناسبترین نوع انکر بولت (شیمیایی یا مکانیکی و سایز مورد نیاز) بر اساس بارهای وارده می باشد.

نرم افزار توصیه شده برای طراحی انکر بولت های مکانیکی و شیمیایی (چسب های هیلتی) نرم افزار Hilti PROFIS Anchor می باشد.