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Stay Cable Systems

DYNA Bond® Anchorage

The DYNA Bond® Anchorage consists of a conical steel pipe (bond socket), supporting a wedge plate where the strands are anchored with 3-part-wedges. A ring nut is fitted on a threaded end of the bond socket and distributes the cable force through a bearing plate into the structure. During the construction phase prior to grouting the bond socket, all the applied loads are supported directly by the wedges.

After filling the bond socket with cement or epoxy grout, all additional loads (including dynamic loads from traffic, vibrations and earthquakes) are then partly resisted by the wedges and partly transmitted by the bond between the strands and the grout via the bond socket directly to the bearing plate and the supporting structure (only the bond socket needs to be grouted to achieve the behavior described above).

DYNA Bond® Anchorages have an excellent fatigue resistance because the bond action in the bond socket substantially reduces the magnitude of the dynamic loads reaching the wedge anchorage. Fatigue tests have proven that a stress range of up to 240 N/mm² (upper stress 0.45 GUTS) may be safely resisted for over 2 million cycles.

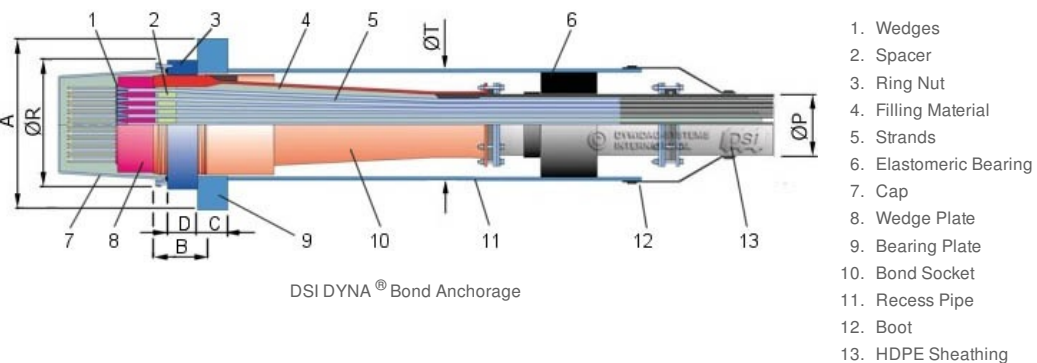
Additional advantages of the DYNA Bond® Anchorage:

- redundant load carrying system.
- reliable corrosion protection for the sensitive anchorage area because all voids in the anchorage zone are filled with a stable and robust filler.
- enhanced fire resistance and protection against vandalism, impact loads, and blast effects.



A further important construction detail is the use of an elastomeric bearing at a certain distance away from the anchor block. The most important requirement for the design of the bearing is to prevent the introduction of harmful bending in the anchorage area. Because the injection of the grout extends beyond the bearing the DYNBA Bond® Anchorage provides a clear statical system for absorption of bending loads due to lateral cable movements (cable rotation).

The bearings are dimensioned such that not bending loads that would be harmful to the anchorage are introduced into the anchorage area.



DSI DYNA® Bond Anchorage

cable type	DYNA Bond® Anchorage (forces calculated with strands 0,62" St 1670/1860)								
	DB-P12	DB-P19	DB-P27	DB-P37	DB-P48	DB-P61	DB-P75	DB-P91	DB-P108
No. of strands	12	19	27	37	48	61	75	91	108
Forces [kN]									
ultimate load (GUTS)	3,348	5,301	7,533	10,323	13,392	17,019	20,925	25,389	30,132
working load (0.45 x GUTS)	1,507	2,385	3,390	4,645	6,026	7,659	9,416	11,425	13,559
Dimensions [mm]									
A - bearing plate	300	370	430	500	580	640	715	780	855
B - thread**	125	133	142	154	170	175	195	215	235
C - bearing plate	50	60	70	80	90	100	110	120	130
D - ring nut	90	100	110	120	135	150	170	190	210
ØR - ring nut	244	287	326	378	434	480	536	584	636
ØT - recess pipe	219	245	299	324	394	419	470	508	559
ØP - HDPE Sheathing	110	140	160	180	200	225	250	280	315

*standard length, can be supplied longer on special request.

i The values are based on the German Code (DIN). Adaptations to other code systems or concrete strengths (e.g. ASTM, BS, etc.) are possible.