



DYWIDAG Barrier Cable System

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DYWIDAG Barrier Cable System

Prestressed strands are an increasingly popular option in the selection of vehicular and pedestrian barrier systems. The DYWIDAG Barrier Cable System has two particular advantages over other systems available on the market:

Firstly, it is economic in its high strength to weight ratio; and it resists impact in tension, which is more efficient than the bending mode of other systems.

Secondly, DYWIDAG can provide complete service including:

- Selection of Corrosion Protection System
- Design and Detailing of Anchorages
- Supply and Installation of complete Barrier System



Code Compliance

Building codes provide very few guidelines for the design and installation of barrier cable systems. The Post-Tensioning Institute (PTI) Specification For Seven Wire Steel Strand Barrier Cable Applications has adopted the criteria given in the Uniform Building Code USA, which prescribes a specific lateral load resistance at a fixed distance from the floor level for vehicular restraint, as well as minimum cable spacing for pedestrian protection. Additional information on the design of barrier cable systems is available from your local DYWIDAG representative.

As well as meeting PTI specifications, the DYWIDAG wedge-anchor system when properly installed exceeds ACI code requirements for guaranteed ultimate capacity of the strand.

Corrosion Protection

DYWIDAG can assist in the selection of appropriate corrosion protection measures according to your project location. DYWIDAG can supply barrier cable with various protection options:

- Galvanized coating conforming to ASTM A475
- Polyethylene coating in various colors available
- Epoxy coating conforming to ASTM A882*

Anchorage components may be protected through hot dip galvanizing (ASTM A153) or zinc plating (conforming to ASTM B633).

Anchorage Components

The anchorage system selected for the barrier cable is the most critical element in the overall performance and safety of the barrier cable system. DYWIDAG offers a wide range of embedded and external connection components to meet a wide variety of architectural and support conditions.

To ensure that anchorages develop the required capacity, backstressing is required for every cable anchorage. Though the cables are pretensioned to a relatively small force, anchorages will experience the full cable tension during impact. If the cables are properly installed the connection of the barrier system to the column or shear wall is the connection that will ultimately resist the impact, not the cable anchorages or cables themselves.

Service and Technical Assistance

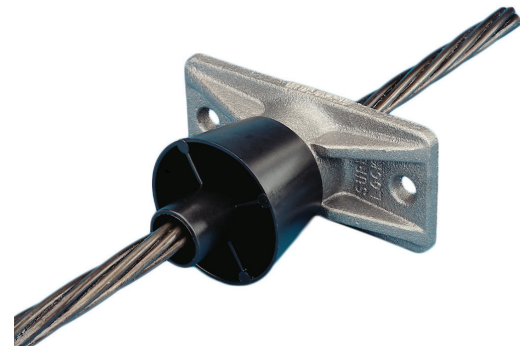
DYWIDAG Barrier Cables are cut to length and shipped together with all required accessories and attachments or shipped on wooden spools for site fabrication. Field technicians are available to assist contractors in placing and stressing DYWIDAG supplied barrier cables. DYWIDAG also has trained and experienced field crews available to perform a complete system installation in accordance with the project specifications. Installation is quick, especially when performed by DYWIDAG experienced crews.

* Cannot be backstressed without damage to coating

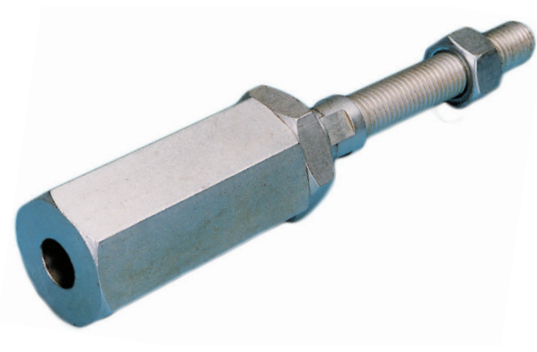
Components and Strand Properties

Barrier Cable System Components

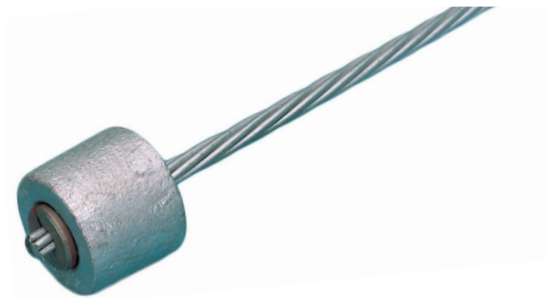
- Monostrand Anchorage and Pocket Former
- Barrel & Wedge
- Adjustable Anchor (GRAB-IT™)
- Barrel & Wedge Anchor with end cap



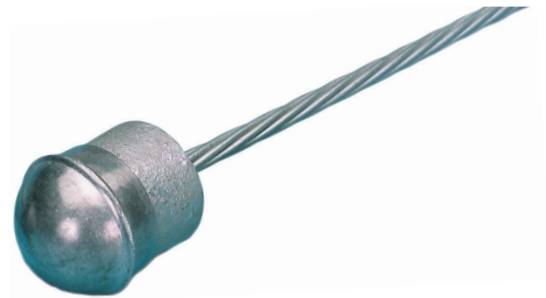
MONOSTRAND ANCHORAGE AND POCKET FORMER



ADJUSTABLE ANCHOR GRAB-IT



BARREL AND WEDGE ANCHOR



BARREL AND WEDGE ANCHOR WITH END CAP

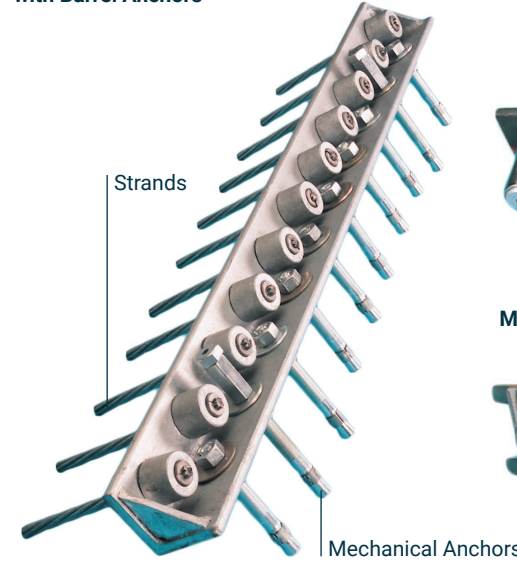
Mechanical Properties of Strand for Barrier Cable

Steel Grade	Nominal Diameter		Ultimate Strength		Ultimate Elongation	Nominal Area		Nominal Weight	
	[in]	[mm]	[lbs]	[kN]	%	[in ²]	[mm ²]	# per 1,000ft	[kg/1,000m]
250/1,725	3/8	9.53	20.0	89.0	3.5	0.085	54.84	309	460
270/1,860 ¹⁾	1/2	12.70	41.3	183.7	3.5	0.153	98.71	520	774
250/1,725	1/2	12.70	38.2	169.9	3.5	0.153	98.71	544	810
230/1,585	1/2	12.70	33.1	147.2	3.5	0.144	92.90	508	756
195/1,345	1/2	12.70	29.0	129.0	3.5	0.150	96.52	516	770

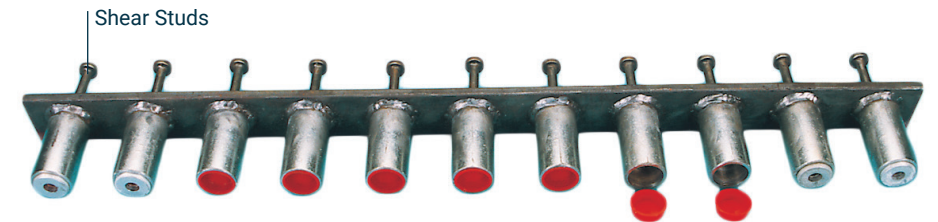
1) Non galvanized – all other steel grades are galvanized

Anchorage Types

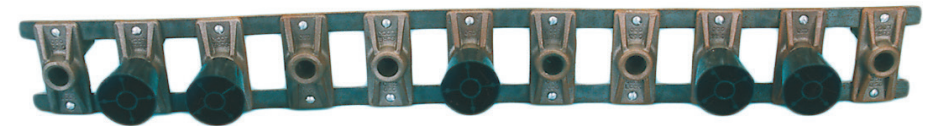
Surface Mounted End Angle with Barrel Anchors



Shearwall/inaccessible Column Embedment

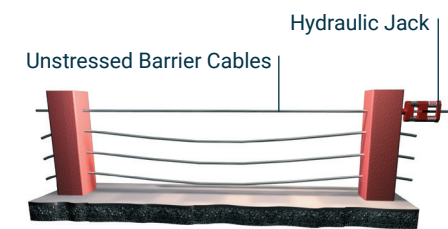


Monostrand Anchorages for embedment Reserving Pocket Formers

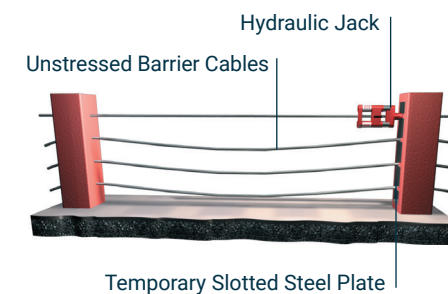


Stressing Types

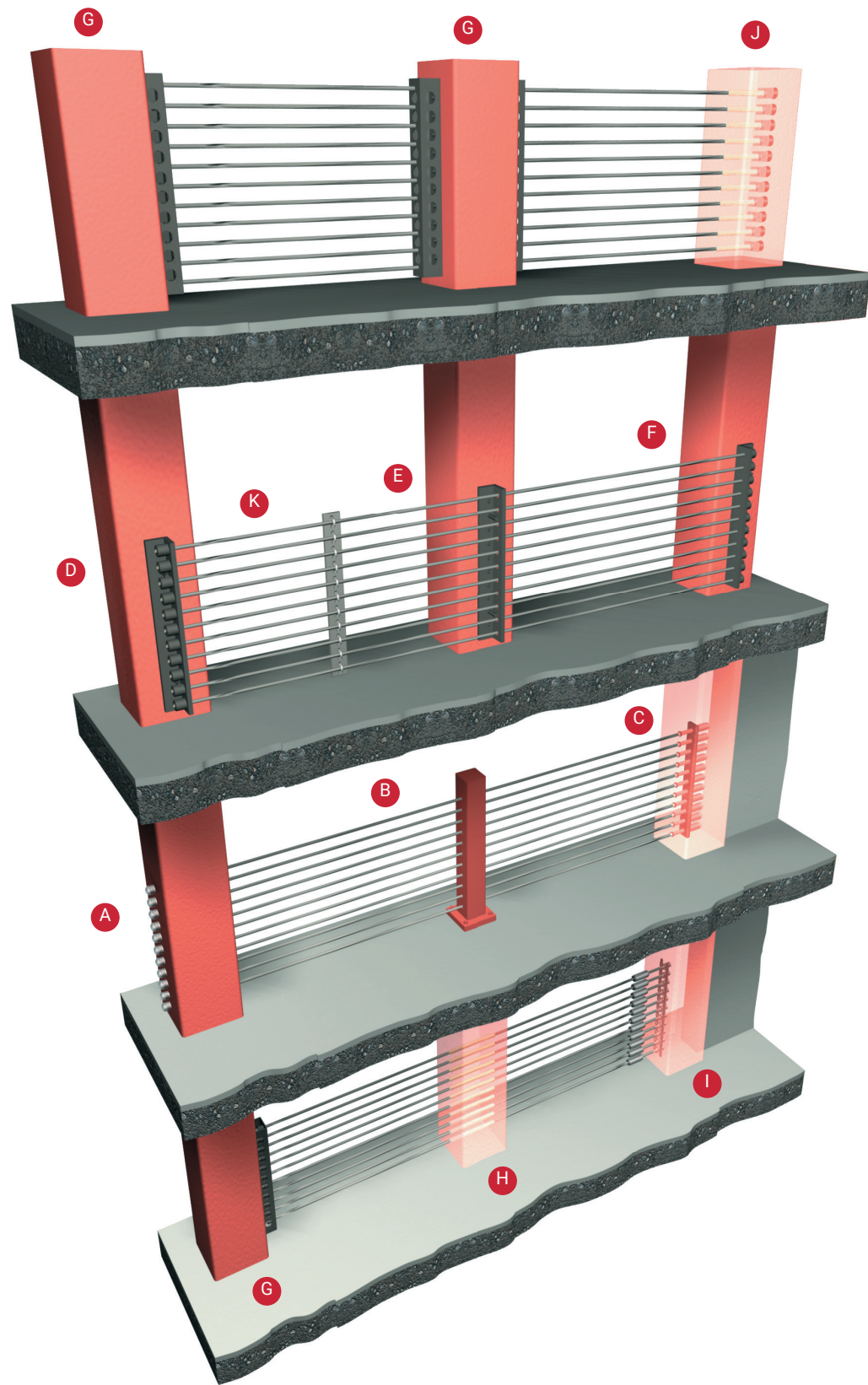
Stressing



Backstressing



Applications



- A Barrel Anchors with End Caps
- B Intermediate Tube
- C Embedded Anchors
- D End Angle with Barrel Anchors and End Caps
- E Intermediate Angle or Channel
- F End Angle with Angle Caps
- G End Tube with Barrel Anchors
- H Embedded Intermediate Sleeve
- I Detail with Monostrand Anchorages for Inaccessible End Conditions
- J Monostrand Anchorage and Pocket Former
- K Intermediate Spreader Plate with U-Bolt

References

Unconventional Construction with DYWIDAG: Parking Structure Serves as the Civic Center's New Portal

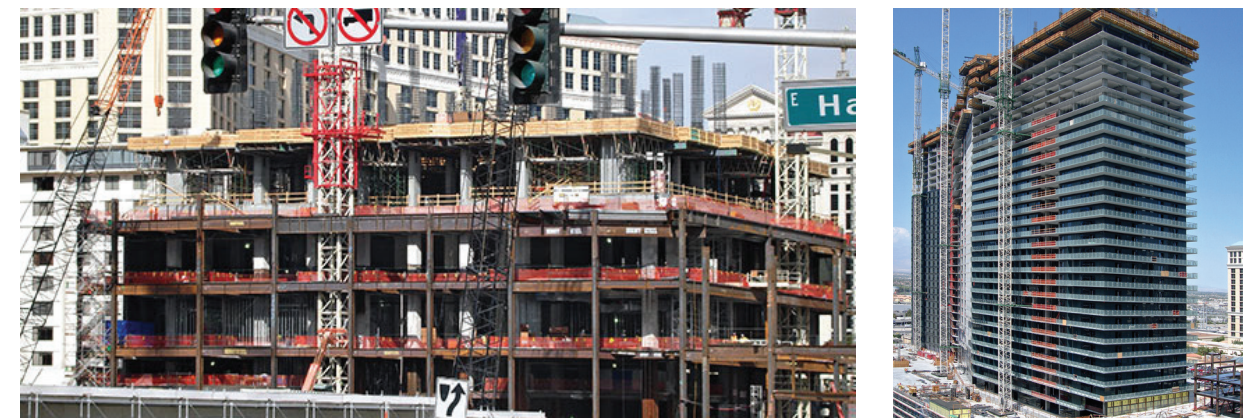


Owner City of Santa Monica, CA, USA +++ Architect International Parking Design, Sherman Oaks, CA, USA +++ Engineering Frame Design Group, Sherman Oaks, CA, USA +++ General Contractor ARB Incorporated, Lake Forest, CA, USA +++ Subcontractor Pacific Coast Steel, Santa Fe Springs, CA, USA

DYWIDAG Unit DYWIDAG USA, BU Monostrand, Long Beach, CA, USA
 DYWIDAG Scope Production, Supply and Installation

DYWIDAG Products DYWIDAG Monostrand Tendons including accessories, 11 strand galvanized barrier cables and structural steel components

DYWIDAG Monostrand Systems and Galvanized Barrier Cables – Cosmopolitan Resort & Casino



Owner Cosmo Senior Borrower LLC, Las Vegas, Nevada, USA +++ General Contractor Perini Bldg.Group, Las Vegas, Nevada, USA +++ Architect Friedmutter Group, Las Vegas, Nevada, USA +++ Consulting Engineers Desimone, Las Vegas, Nevada, USA +++ Subcontractor Century Steel/Pacific Coast Steel, Las Vegas, Nevada, USA

DYWIDAG Unit DYWIDAG USA BU Monostrand, Long Beach, USA
 DYWIDAG Scope Production, Supply and Technical Support

DYWIDAG Products approx. 610m (2,000ft) of Galvanized Barrier Cables, approx. 855km (2,805,415ft) of Unbonded DYWIDAG Monostrand Tendons



Get in touch.

For local contact details, please visit our website.



dywidag.com/contact

USA

DYWIDAG-Systems International USA Inc.

8324 East Highway 67
Alvarado TX 76009
+1-817-473 6161
sales.us@dywidag.com

DYWIDAG-Systems International USA Inc.

320 Marmon Drive
Bolingbrook IL 60440
+1-630-739 1100
sales.us@dywidag.com

DYWIDAG-Systems International USA Inc.

Florida
+1-954-882-5336
sales.us@dywidag.com

DYWIDAG-Systems International USA Inc.

2154 E. South Street
Long Beach CA 90805
+1-562-531 6161
sales.us@dywidag.com

DYWIDAG-Systems International USA Inc.

1263 Newark Road
Toughkenamon PA 19374
+1-610-268 2221
sales.us@dywidag.com

Canada

DSI Canada Civil Ltd.

37 Cardico Drive
Stouffville ON L0H 1G0
+1-905-888 8988
sales.ca@dywidag.com

DSI Canada Civil Ltd.

19433 96th Avenue, Suite 103
Surrey BC V4N 4C4
+1-604-888 8818
sales.ca@dywidag.com