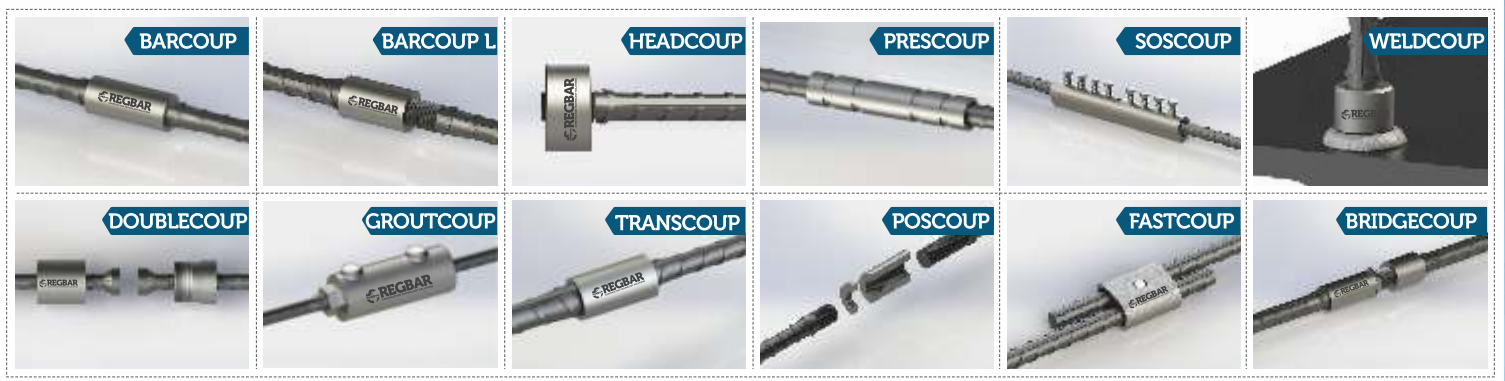


GROUND EQUIPMENT



REGBAR
CONSTRUCTION TECHNOLOGY SOLUTIONS

REBAR COUPLERS



Save 23.5 kg per splice



Mobile equipments provide zero transportation cost
Quick threading of rebars at site (UPT system)



CONSTRUCTION TECHNOLOGY



GROUND EQUIPMENT

Tunnel Support Equipment



REGBAR

CONSTRUCTION TECHNOLOGY SOLUTIONS



Innovative
solutions
for better
future



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GROUND EQUIPMENT

ANCHORAGE

Properties

Equipment is not transported due to on-site manufacturing.

- ▶ Easy and fast installation.
- ▶ No need for additional special tools.
- ▶ No torque requirement.
- ▶ 2009 International Building Code (IBC) , 2009 International Residential Code (IRC) ,State Departments of Transportation TS500, TS 708, ISO 15832



It is the connection of steel rebar into the concrete in the reinforced concrete construction. The covering is connected to the ground with anchorage bars (generally steel bars) on regular basis to keep the facade lining in the piles. The anchorage with one bar is made with drilling the ground, laying the steel bars into the hole and injecting the space around the bar (if available, by drawing casing pipe) by using 20-30 cm auger in diameter, drill or drifter, casing pipe if required.

Anchorage are designed to meet or exceed major international building codes and Department of Transportation requirements, including:

AASHTO	ACI 349	IBC Type 1 (125% Specified Yield)	NF A 35-020-1
ACI 318 Type 1 (125% Specified Yield)	AS3600	ISO 15835	Turkish Seismic Code 2018
ACI 318 Type 2 (Specified Ultimate)	Eurocode 2	GOST 34278	US Army Corps of Engineers



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Detail

Regbar high-strength reinforcement threading machines enable flawless thread cutting in every quality of rebar detailed in below table. Mobile Regbar equipment enable on-site processing without the need to carry equipment. Thus, both the cost and time loss resulting from transportation of equipment is prevented and work is followed much better.



The injection is applied in the length out of active area. The anchorage bars are fixed to the facade lining. In some situations, the pre-stress is applied to the bars. While the anchorage bars drop by the tensile strength, it is met with frictions around the anchorage bars. To sum up, it is the process of mounting or fixing a block to a more durable and stable place behind it. It is the process of fixing the unstable soil to a more durable part behind it (sometimes to the durable soil behind it, sometimes to the available soil by trusting only the friction of the anchorage or to the reinforced concrete pile which is piled / poured on the back side before) in order to prevent the potential landslide. Regbar presents optimum solutions by carrying out the demanded anchorage threading in-place with the high technological mobile equipment sent to your site with no extra rebar logistic cost.

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Product Code	Bar Sizes			Length	
	Metric [mm]	US	Canada	[mm]	['"]
ANCHRG12	12	#4	10M	38	1-1/2
ANCHRG14	14	-	-	42	1-21/32
ANCHRG16	16	#5	15M	47	1-27/32
ANCHRG18	18	-	-	50	1-31/32
ANCHRG20	20	#6	20M	54	2-1/8
ANCHRG22	22	#7	-	58	2-9/32
ANCHRG26	26	#8	25M	60	2-23/64
ANCHRG28	28	#9	30M	68	2-43/64
ANCHRG30	30	-	-	70	2-3/4
ANCHRG32	32	#10	-	72	2-53/64
ANCHRG36	36	#11	35M	78	3-5/64
ANCHRG40	40	-	-	80	3-5/32

GROUND EQUIPMENT

SELF DRILLING ROCK BOLT

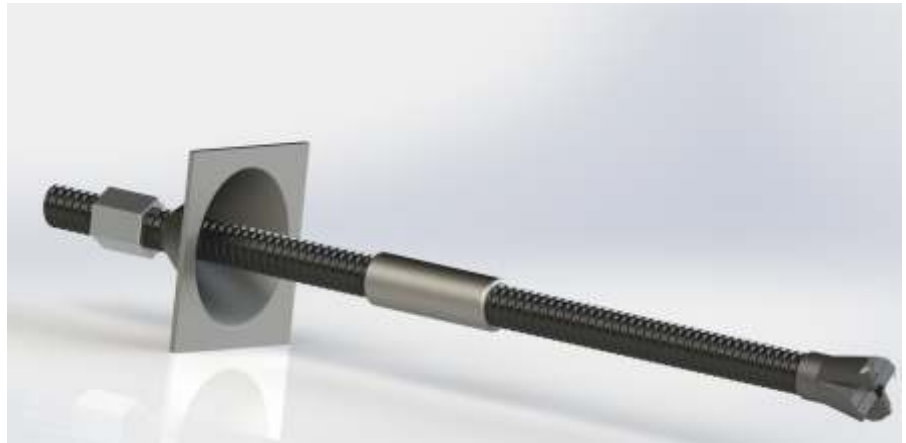
Properties

The self-drilling anchor bolt device (also known as Threaded Hollow Bars) makes your job much easier, as it is capable of performing procedures of drilling, anchoring and injection all at once. There is a hollow interior of the self-drilling anchor bolt, a threaded exterior and a drill bit that is used for drilling. The self-drilling anchor bolt's hollow interior enables air and water to freely move through the drilling process, flushing the particles. After completion of the drilling process, it also enables immediate injection. For fractured or hard rock formations as well as uneven ground conditions (such as gravel, soft, clay and non-homogeneous soil), self-drilling anchor bolts present a specific bolting solution.

Applications

Self-drilling anchor bolts have a wide variety of fields of operation, including reinforcement of weak tunnel rock / soil conditions, tunnel stabilization, tunnel root piling, and tunnel entrances.

Tunnel entrances, tunnel trenches, cut and cover areas, strengthening / stabilization of excavation routes, dams and slopes, as well as strengthening of retaining walls and noise barriers are other applications where self-drilling anchor bolts are used.



The rock bolt, which, in addition to its use in foundation piles and support piles, can also be used as an avalanche safety shield, provides extensive solutions for users.

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Accessories



Product Dimensions

The threaded hollow bars provide comprehensive solutions for tunneling and mining industry growth. As per the API specifications, the self-drilling anchor bolts are manufactured, wherein the hot drawn tubing is cold rolled to a round thread profile.



Product Code	Outer Dia [mm]	Inner Dia [mm]	Cross Sectional Area [mm ²]	Tensile Load [Kn]	Yield Load [Kn]	Weight [kg/m]
SDR32N	32	18.5	396	280	230	3.40
SDR32S	32	15	498	360	280	4.10
SDR38N	38	19	171	500	400	6.00
SDR51N	51	33	936	800	630	8.40



GROUND EQUIPMENT

ANCHOR BOLT

Properties

Benefits of the system:

- ▶ Standard and approved rebar anchor bolt system
- ▶ Approved design parameters
- ▶ Fast delivery directly from stocks
- ▶ Certified manufacture
- ▶ A wide range of products including anchors for all purposes
- ▶ Accessories for fast and easy installation



There are two types of anchors: Long anchors used for inserts and short anchors with head studs used for fastening to foundations. Long anchor bolts transfer the compression and tension forces across the rib dimension of ribbed bars and short anchor bolts transfer them with the combination of head studs and rib bound.

In order to assemble the Regbar Anchor Bolt Reinforcement Anchor System to casting and foundations easily and accurately, Anchor Bolt Installation Templates are provided. Iron Anchor Bolt which is a steel piece casted into



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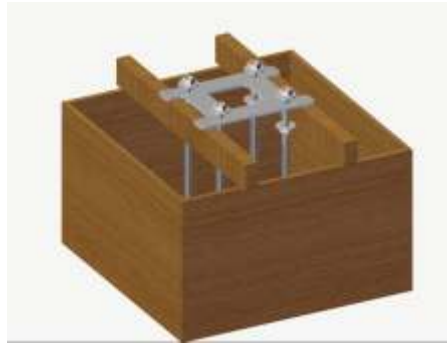
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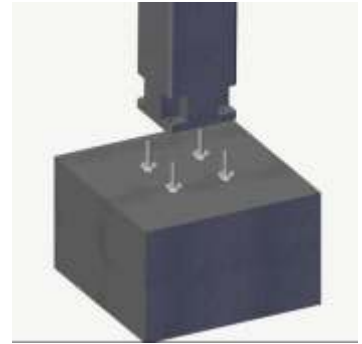
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STEP 1



STEP 2



STEP 3

Detail

Regbar Anchor Bolt Reinforcement Anchor System is used to anchor the concrete or steel structures and machinery to concrete base structures. Product range is suitable for high loading conditions. This multi-purpose anchor bolt is widely approved and adopted.

Regbar Anchor Bolt Reinforcement Anchor Bolt transfer the tension, compression and shear forces to reinforced concrete foundation structure (for example foundations).



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	Bar Sizes			Threading Lenght	Length of Bolt	Type	Rebar Diameter
Product Code	Q [mm]	US	Canada	A [mm]	L [mm]		Metric [mm]
ANPL12	12	#4	10M	120	700	Straight – L Anchors – J Anchors- Welded Pipe Anchor Bolts	12
ANPL14	14	-	-	130	750		14
ANPL16	16	#5	15M	140	800		16
ANPL18	18	-	-	140	850		18
ANPL20	20	#6	20M	140	1000		20
ANPL22	22	#7	-	150	1100		22
ANPL26	26	#8	25M	170	1160		26
ANPL28	28	#9	30M	170	1200		28
ANPL30	30	-	-	190	1420		30
ANPL32	32	#10	-	190	1420		32
ANPL36	36	#11	35M	200	2000		36
ANPL40	40	-	-	2000	2000		40

GROUND EQUIPMENT

TIEROD

PROPERTIES

Advantages:

- ▶ Weightless mounting with high strength and low cost
- ▶ Maximum continuous versatile gear system
- ▶ Bidirectional (Right and left mounting)
- ▶ Specific corrosion protection for aggressive environments
- ▶ Stocking in different sizes



TIE ROD - TIE BACK – TAYROT SYSTEMS

Regbar offers its customers a wide range of sizes and steel grades for Tie Rod System Assemblies. These can be integrated into **Regbar Sheet Pile or Combination Wall** or other retaining walls without any problem. Corrosion protection options are also available. Regbar can offer the customer a complete design feature in accordance with the project requirements.

Tie-Rot (rod-shaft) is a tensioning shaft system used to prevent mold opening in curtain and column molds. Reduces risk in mold construction, improves strength and reliability.

It has spheroidal casting nuts at both ends and optional mirrors (washer) are available.



Detail

The Tie-Rod Marine system sections used in maritime, berthing facilities, barge and ship piers and also offshore platforms.

Designed for length adjustment or bar connection after cutting for use in environments of challenging handling.

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Corrosion Protection Options

- Double Corrosion Protection (DCP) ► Hot-dip galvanizing ► Epoxy Coating ► Band coating



Product Code	Bar Sizes Q [mm]	Coating	Length of Bolt mm	Strenght Detail F [Kn]	Nut Size	Dome Nut SW x L x d [mm]	Plate a x t x d [mm]	Coupler d x L [mm]
TIEROD 17	17	HDG	6000	15-17 Tons	17 x 80		200*200*10	17 x 120
TIEROD 20	20	HDG	6000	17-19 Tons	20 x 80		200*200*12	20 x 130
TIEROD 24	24	HDG	6000	18-30 Tons	24 x 80	27 x 33 x 35	200*200*20	24 x 140

Regbar receives your project requirements and helps you design and determine an optimized solution.

In the bar product range, three carbon steel grades up to 700 Mpa yield stress and up to twenty four rods / gear diameters up to M 162 provide a match close to material performance requirements and economic use.

Standard anchorage components and sequential rod connectors for easy installation to all types of seawalls.

Corrosion Protection Options are available.

Design references: BS EN 1993-5, ANSI / AISC 360-05, AS 4100

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Technology



GROUND EQUIPMENT

ROCK BOLT

Properties

Continuously high tensile, hot rolled threaded rods

- ▶ Can be used with left or right screw threads.
- ▶ If desired, epoxy coating is available for corrosion protection.
- ▶ Continuous gear provides an environment that enhances the lock-in with the surrounding.
- ▶ Rough thread and hard rod surface are robust and even sensitive to small damages.
- ▶ Fully threaded steel anchors are possible with adjustment of length.
- ▶ Re-connection at any point is possible with couplers.



Anchorage are designed to meet or exceed major international building codes and Department of Transportation requirements, including:

AASHTO	ETA-13 / 0840	ETA-05/0122	NF A 35-020-1
ACI 318 Type 1 (125% Specified Yield)	AS3600	ISO 15835	Turkish Seismic Code 2018
ACI 318 Type 2 (Specified Ultimate)	Eurocode 2	GOST 34278	US Army Corps of Engineers

Detail

MECHANICAL GROUND ROCKBOLT

Regbar Rockbolt is a unique combination rock bolt system. It offers the combined advantages of anchoring and then a fully filled rock bolt at the same time. Two-stage installation procedure enables quick installation and in-site anchoring, separate and independent injection, flexibility with respect to operating cycles.



Due to the controlled injection procedure and different iron platings, **Regbar Rockbolt Rock Bolts** is a reliable soil control system for underground applications. **Performance of Regbar Rockbolt** has been proven in various underground construction projects. The system has become a standard in today's most advanced soil control procedures.

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REG 555 / 700 GR 81 & REG 500 / 550 GR 75

Product Code	Bar Sizes Q [mm]	Threading Length A [mm2]	Length of Bolt G[kg/m]	Type	Strenght Detail F [Kn]	Nut F [Kn]	Dome Nut SW x L x d [mm]	Plate a x t x d [mm]	Coupler d x L [mm]
RCBT12	14	113	0,89	Reinforcement systems	62	22 x 25		40 x 6 x 16	22 x 75
RCBT14	16	154	1,21		85	27 x 35			27 x 90
RCBT16	19	201	1,58		110	32 x 40	27 x 33 x 35	50 x 8 x 20	32 x 105
RCBT20	23	314	2,47		175	36 x 45	36 x 42 x 49	60 x 10 x 25	36 x 120
RCBT25	29	491	3,85		270	41 x 50	41 x 45 x 55	70 x 12 x 30	40 x 135
RCBT28	32	616	4,83	Geotechnical Rods	340	46 x 50	41 x 54 x 62	85 x 14 x 33	45 x 145
ANPL32	36	804	6,31	Post-tensioning Bars	440	55 x 60	46 x 57 x 70	100 x 15 x 38	52 x 160
ANPL36	41	1020	7,99	Mining and tunneling Rods Tie rods	560	60 x 65		150 x 35 x 42	60 x 170
ANPL40	45	1260	9,87		799	65 x 70	60 x 70 x 88	120 x 17 x 47	65 x 190
ANPL43	48	1452	11,4		1080	70 x 75	70 x 80 x 100	185 x 45 x 50	80 x 200
ANPL50	56	1960	15,4		1818	79 x 90	80 x 85 x 107	150 x 20 x 58	80 x 235
ANPL57	63	1960	15,4		2215	90x110x102	90 x 100 x 120	250 x 55 x 67	102 x 260
ANPL63	70	3167	24,86		3167	100x115x108	100 x 115 x 144	265 x 60 x 74	102 x 300
ANPL75	82	4418	34,68		4418	100x100x108	100 x 120 x 160	320 x 70 x 86	108 x 270



- Ground support for partially accessible or non-accessible areas throughout their operational life.
- For permanent roads and excavations,
- Hydro-electrical and underground oil or gas storage caves,
- Undersea or sewerage tunnels,
- Efficient, practically proven and reliable rock reinforcement system,
- The combination of a sudden point anchor and a fully loaded rock bolt,
- Load capacity immediately after assembly with mechanical anchor,
- Fast assembly and flexible post grouting behind the work surface
- Double corrosion protection by polyethylene coupler and mortar coating,
- Easy adjustment of corrosion protection level according to customer demands,
- It can be used for semi-automatic or manual installation procedure.



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GROUND EQUIPMENT

TUNNEL SUPPORT EQUIPMENT

Properties

LATTICE GIRDER MANUFACTURE PROFILE ARCH MANUFACTURE UMBRELLA SYSTEM

- ▶ Regbar mainly manufactures the below tunnel support equipment.
- ▶ We manufacture Rock Bolts and Anchorage, Lattice Girder, Tunnel Lining, Mold Lining and Profile Lining (Profile Arch).
- ▶ Having a great experience in tunnel equipment, soil stabilization equipment and accessories, Regbar has been involved in numerous subway and tunnel projects regarding application of Umbrella System.



The requested special design products are manufactured in our factory and dispatched to field as ready-to-implement. Our machine park mainly includes the following;

Profile bending machine, plasma and laser cutting machines, CNC Lathe and Vertical Machining Center, Saws, Gas Metal Arc and Argon Welding Machines, Sheet Cutting Machines and plastic injection machines for protective accessories. All kinds of steel design, manufacturing and application are performed depending on the requirements of projects.

BIBLOCK CIRCUMFERENTIAL CONNECTION

Biblock system are circumferential connectors that can be custom designed for tunnel segment production. 2 most commonly used sockets, 1 pin and 1 centering ring. In some types, the pin and centering ring are molded together. The cutting capacity is guaranteed by the centering ring followed by the pin. Tensile strength depends on pin / socket interaction. Different pins, sockets and centering rings are available



- Advantages;
- Cost savings per mold / ring;
- Fast segment setup;
- Safer field conditions;
- Less staff needed on the tunnel face;
- Better segment alignment;
- Smooth inner tunnel surface;
- Lower water friction in hydraulic tunnels;
- Dielectric insulation throughout the tunnel lining.
- Lifting sockets can be used for a variety of precast applications. Two functions

These designed sockets can be used with the TBM segment mounting system to lift the segments into place in the ring or for primary or secondary injection across the segments.

SEGMENT GASKETS

Gaskets produced and vulcanized by extrusion method are combined with heat welding process. The contact between the concrete ring and the gasket occurs in the area of the claw protrusions of the gaskets. The contact between the gaskets takes place in the dorsal area of the gaskets so that they overlap.

By determining the difference between concrete gaps, the pressure values of the ring gaskets that will overlap.



TUNNEL BORING MACHINE LUBRICANTS

Head Seal Grease for Tunnel Boring Machines (TBM)

Tunnel Boring Machine Exclusive Grease Oil

Tunnel boring machines is an exclusive grease oil. It effectively protects the main bearing and prevents soil, protects main bearing seal from water or dust. It is formulated to resist high water and soil pressures and has excellent lubrication and pumping properties, and adheres to all surfaces. It contains biodegradable and renewable raw materials.

Minimum service temperature	-30 °C
Maximum service temperature	200 °C
Color	Black
Density [kg/m ³] 20°C	1200 ± 50
4-ball wear DIN 51350:5 [mm]	< 0.9
Water wash out (38°C) ISO 11009 [%]	< 5
Water spray off (38°C) ASTM D4049 [%]	< 7
Water resistance DIN 51807/1	0
Flash point (base oil)	> 285°C
Biodegradation (base oil) CEC-L-33-A-93	> 90%



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Tail Seal Grease for Tunnel Boring Machine (TBM)

Due to its TSG consistency, it is a pumpable seal. Due to its consistency, this grease does not decompose under high mechanical pressures during tunnel boring and its lubrication property protects the tails. In addition, the product reduces the heat resistance. It reduces the risk of flame formation in the tunnel.



Multi-purpose EP2 grease for Tunnel Boring Machines (TBM)

Advantages and benefits: RX3 is a highly biodegradable multi-purpose calcium thickened EP2 grade grease designed for main bearing lubrication, as a screw conveyor drive assembly grease and as a rotary swivel grease. Properties: Contains antioxidants, corrosion inhibitors and EP/AW additives. Offers good mechanical stability, load carrying capacity and corrosion protection, which makes it suitable for loaded bearings as well as wet environments. High quality multipurpose grease suitable for a wide range of plain and rolling bearings. Highly biodegradable and based on renewable raw materials.

SPECIFICATIONS	METHODS	CONDITIONS	UNIT	VALUE
Form				Homogenous paste
Color				Light brown
Base oil type				Vegetable oil
NLGI Grade				2
Consistency	ISO 2137		[1/10 mm]	265-295
Density	ASTM D217	20°C	[kg/m ³]	Approx. 930
4-ball wear	DIN 51350:5		[mm]	0,5
4 ball weld load	DIN 51350:4		N	2800 N
Water resistance	DIN 51807/1			0-90
Water wash out	ISO 11009	(1h 80°C)		5%
Biodegradation	OECD 301 B			> 90%
Base oil viscosity	ISO 12058	(40°C)	mm ² /s	130 mm ² /s
Base oil viscosity	ISO 12058	(100°C)	mm ² /s	24 mm ² /s

GROUND EQUIPMENT

SOIL NAIL

Properties

- Tendons are suitable for temporary or permanent works as long as they don't affect the adjacent buildings. They don't need to be cut or taken off in the terrain and at a subsequent stage.
- A wide range of products fully based on threaded rods available in 4 different categories and in 7 different diameters up to 65 mm.
- High quality steel may be preferred for ease of transportation and to reduce the diameter of compressed hole.
- Corrosion prevention accessories are included in the system.

Regbar Soil Nails form additional reinforcements in top/down constructions and for stabilization of excavation and hillsides. **Regbar Soil Nails** are placed in the holes and ground anchorage is completed with shotcrete system. It is recommended that the soil nails should not exceed 60% of the final strength of the reinforcement.



Detail

Soil nailing is typically used to stabilize the slopes or excavations where the top/down structure is more advantageous in comparison with other retaining wall systems. In certain circumstances soil nailing is an applicable alternative in comparison with ground anchor walls used in commonly preferred top/down fixing system in terms of technical feasibility, construction costs and construction period.



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- Soil Nail walls are particularly suitable for excavations on vertical grounds or on grounds requiring vertical cuts and it has been shown that they are particularly suitable for the following temporary or permanent applications:
 - Highway excavation cross section
 - Expanding road under the end of an existing bridge.
 - Repairing and restructuring existing retaining structures.
 - Temporary or permanent excavations in urban areas.
- It has been proven that soil nailing is economically attractive and technically applicable in below circumstances:
 - Excavated soil can stand without any support on 1-2 meter (3-6 ft) high vertical or almost vertical grounds for 1-2 days.
 - All soil nails in this section are above the groundwater table.



- In order for soil nails to be corrosion resistant it is recommended that the reinforcements/rebars should be epoxy coated or galvanized. If needed, Regbar also provides coating service.
- Regbar also designs and manufactures connection elements in conformity with special design and standards which are 100% compatible with Soil Nails.

Regbar Construction
Technology



GROUND EQUIPMENT

POST TENSIONING

Properties

Post tensioning is a concrete reinforcement technique. Post tensioning tendons which provides pre-tensioning of steel ropes inside the plastic channels or couplers are placed in the forms before placing the concrete. After the concrete is strengthened, the ropes are swiftly pulled or stretched before applying the service loads and leaned against the outer edges of the concrete.

The initial pressure simply means that the steel is stretched (pulled or stretched) before the concrete supports the service loads. Prestressed precast is actually pulled before the prestressed steel concrete is casted. Post-stressed concrete means that the concrete is casted and then stressed; however, it is still stretched before the loads are applied and stretching continues.



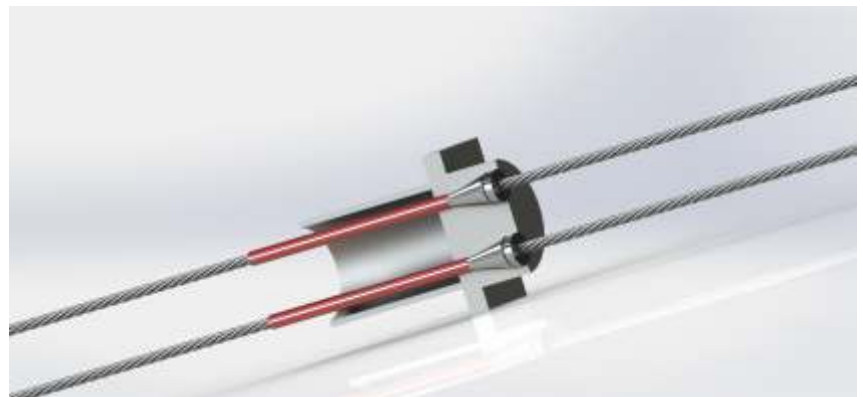
Stretching elements of stretching method consist of rope bundles with high breaking strength. With variations of number of ropes and if needed, variations of rope diameters and quality of the steel, it is possible to obtain a great diversity as rope units with breaking strength between 160 – 16.000 kN in standard units. Larger ropes can be manufactured for special applications.

After stretching, the cables are wedged in an anchor which allows the tensile force to be transferred to the structure. The basis of the post tension method is type anchors

Tensioning Anchors

Post Tension-type tensioning anchors help to anchor and stretch the ropes. These are designed according to the principle of anchoring each rope individually by means of compressors.

The prestressing force is transferred to concrete by a rigid anchor plate. The spirals surround too much concrete in the zone behind the anchor plate. The tensile forces in the anchor zone should be met with an additional soft reinforcement. The reinforcement is determined by considering the shape and dimensions of the anchor plate as well as the dimensions of the end region. Stretching anchors can also be used as fixed anchors. In this case, the anchor head must remain stable during the tensioning process.



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RUSSIA BRANCH

Lesnaya Plaza 4, 4th Lesnoy
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Moscow / RUSSIA

Post Tensioning On The Floor

Post-tensioning reinforced concrete floors have become an important factor for all types of commercial and residential projects, and floor systems. There are two popular methods in flooring systems. Unidirectional pavement slabs, bi-directional pavement slabs. It has been determined that it is economical in parking structure applications, apartment buildings, office buildings, hospitals, high or low office buildings and industrial buildings. With this technology, the problem of cracking which cannot be solved by traditional methods can be solved. Other factors contributing to the growth of post-tensioning construction work include:

- ▶ Simplified plain manufacturing methods have been developed for application.
- ▶ Test methods have been developed to understand the behavior of reinforced concrete and more economical and safe designs are made according to new criteria.

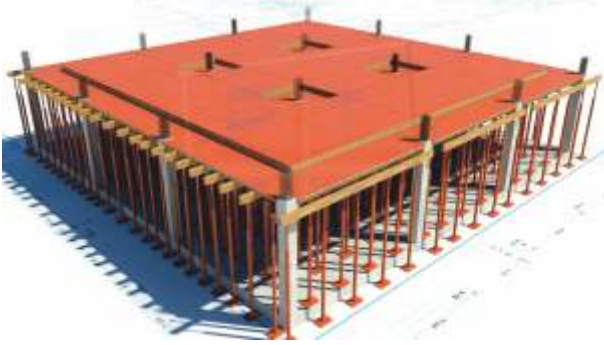


Post-tensioning systems are applied in bridge constructions, high-rise constructions, earth-rock anchors, parking constructions, underground constructions. Economic and safe solutions are reached in heavy loads and wide openings.

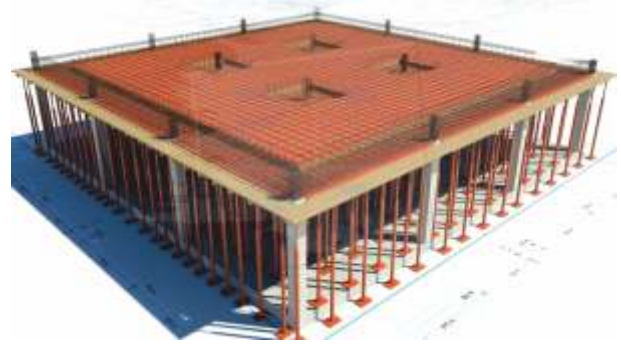
- ▶ One rope and all ropes should be simultaneously stretched, but each rope must be wedged into the anchor one by one.
- ▶ Convenience for various rope diameters and quality.
- ▶ Standardized rope units with tensile strength up to 16,000 kN.
- ▶ Large variety that can meet all requirements in the anchor system.
- ▶ Use of rational methods, suitable materials and simple tools.
- ▶ Possibility of stretching the rope at desired stage or step.
- ▶ Flawless injection possibility provided by the rope's screw effect.
- ▶ In general, anchor is composed of a cylindrical anchor head with tapered holes, tighteners (wedges), anchor coupler, ropes and an anchor plate.
- ▶ All the ropes of a cable are stretched at the same time, but each rope is seated one by one with wedges into a tapered hole in the anchor head. Continuity of the wedging is ensured by continuous contact between the wedges and the ropes.



Method Statement



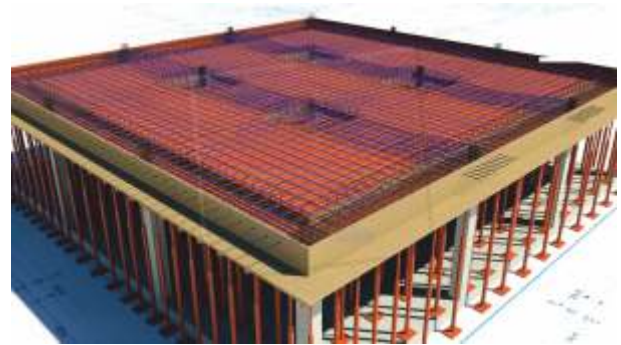
1) Prepare slab molds



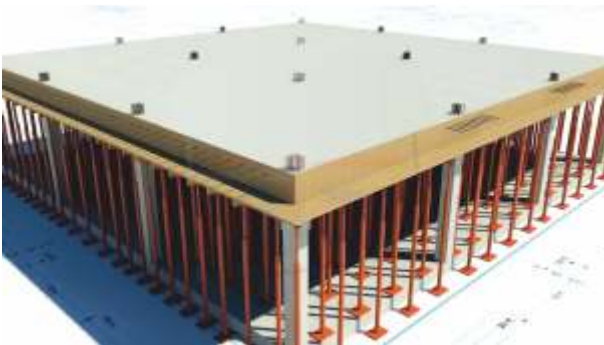
2) Install reinforcing bars of slab



3) Plug the pocket former and anchorages to mold to get the tendon anchors



4) Install all tendons



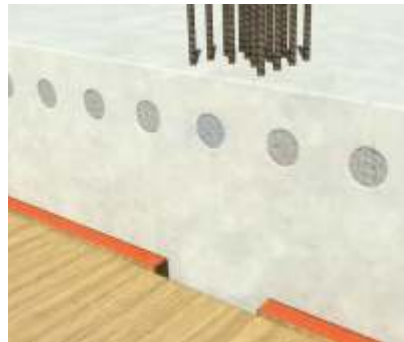
5) Pour concrete



5) Remove former and install lock and jaws



6) Start stressing strands to the value given by the engineer



7) Cut the excess strands and fill gaps with grout.

Regbar Construction
Technology



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GROUND EQUIPMENT

PLATES

Properties

- ▶ No commercial or technical limitation, free cross-border movement of products is possible.
- ▶ Ease of design; Pre-calculated capacities can be used together with Eurocode anywhere in European Union.
- ▶ Products are authorized to get CE marking. The products meet the required quality and safety criteria.
- ▶ Pre-calculated capacities accelerate design work.
- ▶ Standardized products provide fast delivery directly from the warehouse.
- ▶ A wide range of material options and combinations enables usage even in the most demanding situations.
- ▶ Different types of fixing plates are available for any loading situation.



Regbar Strong Anchor Plates are designed to transfer heavy loads in the load-bearing structures of the concrete frame. **The headed rebar anchors of Regbar Strong Anchoring Plates** are optimized for easy installation, even in dense reinforcement. Connection plates are steel parts that are assembled before hardening of the concrete. The plates transfer the loads from the plate to concrete structure. Structural fixings are made by welding the steel plate.

Regbar Strong Anchor Plates are especially suitable for heavy industrial structures. Rebar anchors with stud head also provide structural connections for thinning concrete structures. **Regbar Strong Anchor Plates** are also available in extra long diameters to eliminate the need for additional reinforcement.

Detail



Regbar Strong Anchor Plates, have various sizes from 50 mm x 50 mm to 600 mm x 600 mm, which meets all standard anchorage needs. The plate thickness varies from 3 mm to 50 mm and effective product depth ranges from 220 mm to 955 mm. Plates and studs are available in a variety of material combinations.

To meet customer-specific needs dimensions and shapes of **Regbar Strong Anchoring Plates** can be changed. On request, nail lugs and other components can be drilled on the plate. For example, shear anchors can be welded to the plate.



All **Regbar Strong Anchor Plates** are CE marked according to ETA-16/0430 and fulfill all basic requirements specified for anchor plates. ETA is the only way to determine the appropriate behavior throughout the product life cycle during product performance and manufacture. **Regbar Anchor Plates** are products and concrete members purposefully designed to be used to create a welded connection between reinforced concrete and steel. Head studs stabilize the forces. Bending moments allow the transfer of normal and sliding movements from others to concrete elements.

Regbar Anchor Plates head studs embedded in concrete and the surface of the steel plate are not covered with concrete and forms a welding surface for the concrete.



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GROUND EQUIPMENT

PRE TENSION

PROPERTIES

Prestressed Anchorage Systems

The self-drilling anchor bolt device (also known as Threaded Hollow Bars) makes your job much easier, as it is capable of performing procedures of drilling, anchoring and injection all at once. There is a hollow interior of the self-drilling anchor bolt, a threaded exterior and a drill bit that is used for drilling. The self-drilling anchor bolt's hollow interior enables air and water to freely move through the drilling process, flushing the particles. After completion of the drilling process, it also enables immediate injection. For fractured or hard rock formations as well as uneven ground conditions (such as gravel, soft, clay and non-homogeneous soil), self-drilling anchor bolts present a specific bolting solution.



Anchorage Heads

Regbar Multi-String Prestressed Systems, have been used for years in the construction of bridges, buildings, tanks and many other structures that require engineering reinforcement and support elements. Regbar provides Design and Development, Engineering, Production and Supply Installation, Technical Training, Installation Supervision, Inspection or Maintenance services for Prestressing Systems. **Regbar Pre Stressing Systems** are known for its superior load bearing performance, durability and simple design. **Regbar Pre Stressing Systems** significantly contributes to long life of structures by virtue of its high-quality corrosion protection methods. **They are used on slopes such as Regbar Anchor and Pile Systems** and related product lines and for geotechnical applications as excavation stabilization in a wide range.



The anchorage cover / head used in the pre-stressing anchorages; this part which works with this head plate enables to transfer the pre-stressing force into the sheathing surface.

Anchor Grips

Diameter and number of the tendon materials, dimensions of load distribution plate, diameter of anchor head and number of holes, number of anchor grips are calculated according to the anchor loads depending on the project. **Regbar anchor heads** are available in all sizes and diameters in our stocks.

Anchor heads and grips are designed according to types and number of spiral steel ropes that form the tendon. Threaded grip clamps-grips are used to fasten the anchor tendons to head plate.



The diameter and number of tendon material, the size of load distribution plate, the diameter and hole number of anchorage head, the number of anchorage wedges are calculated according to the anchorage loads in accordance with the project. You can supply the anchorage heads in Regbar brand in any height and diameter from our stocks. The anchorage heads and grips are designed according to the type and number of spiral steel ropes which make tendon. The grip clamps-wedges (grip) are used to fix the cover plates of the anchorage tendon.

Anchor Head Type	Diameter	Head Length	Plate	Grip Type	Angle	Hole
Product Code	A [mm]	H [mm]	a x t x d [mm]	Inches	Degrees °	Number
RGPT 0,5 " x 3	90-110	40-50	200 x 200 x 10	0,5 "	15-30 °	3
RGPT 0,6 " x 3	90-110	40-50		0,6 "	15-30 °	3
RGPT 0,5 " x 4	90-110	40-50		0,5 "	15-30 °	4
RGPT 0,6 " x 4	90-110	40-50		0,6 "	15-30 °	4
RGPT 0,5 " x 5	90-120	40-50		0,5 "	15-30 °	5
RGPT 0,6 " x 5	90-120	40-50		0,6 "	15-30 °	5
RGPT 0,5 " x 6	100-150	40-50		0,5 "	15-30 °	6
RGPT 0,6 " x 6	100-150	40-50		0,6 "	15-30 °	6
RGPT 0,5 " x 7	120-150	40-50		0,5 "	15-30 °	7
RGPT 0,6 " x 7	120-150	40-50		0,6 "	15-30 °	7
RGPT 0,5 " x 8	120-150	40-50		0,5 "	15-30 °	8
RGPT 0,6 " x 8	120-150	40-50		0,6 "	15-30 °	8
RGPT 0,5 " x 9	130-160	50-70	300 x 300 x 25	0,5 "	15-30 °	9
RGPT 0,6 " x 9	130-160	50-70		0,6 "	15-30 °	9
RGPT 0,5 " x 10	130-160	50-70		0,5 "	15-30 °	10
RGPT 0,6 " x 10	130-160	50-70		0,6 "	15-30 °	10
RGPT 0,5 " x 11	150-170	50-70		0,5 "	15-30 °	11
RGPT 0,6 " x 11	150-170	50-70		0,6 "	15-30 °	11
RGPT 0,5 " x 12	150-170	50-70		0,5 "	15-30 °	12
RGPT 0,6 " x 12	150-170	50-70		0,6 "	15-30 °	12

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Anchorage Plates

Regbar produces plates in desired dimensions in line with the measurements and demands in the project. **Regbar Anchorage Plates** can be prepared as special production according to demand and need in addition to standard holes. In addition, the plates can be made of stainless steel on request for projects that are sensitive to corrosion. For protection of plates and threads, Regbar recommends protective hats suitable for your project.

Protective Accessories

They are protective accessories to protect the threads and delivered products and to take measure against rusting. It is placed in the center of the stud and prevents the product from sliding.



Regbar manufactures the plates in requested sizes according the measurements and demands in the projects. Regbar anchorage plates may be prepared in accordance with the demands and needs as a special production as well as the standard drilled holes. In addition, the plates may be manufactured from the stainless steel according to the demands for the projects including the sensitivity to corrosion. Regbar suggest the protective caps appropriate for your Project to protect the plates and grips.

Tensioning Anchors

Pre Tension tensioning anchors help to anchor and stretch the ropes. These are designed according to the principle of anchoring each rope individually by means of compressors.

The prestressing force is transferred to concrete by a rigid anchor plate. The spirals surround too much concrete in the zone behind the anchor plate. The tensile forces in the anchor zone should be met with an additional soft reinforcement

The reinforcement is determined by considering the shape and dimensions of the anchor plate as well as the dimensions of the end region. Stretching anchors can also be used as fixed anchors. In this case, the anchor head must remain stable during the tensioning process.



GROUND EQUIPMENT

NEW GENERATION ANCHOR

Properties

Hybrid Anchor Systems

We offer fast and precise anchorage solutions to your connections with the new generation Hybrid Anchor systems. Our easily applicable product is designed and produced to ensure material strength and quality against natural disasters.

Hybrid Anchor System is a simple, reliable and cost effective ground anchorage solution. Due to its specially designed duck mouth structure, it is easy to install quickly.



Anchorage systems are designed to meet or exceed major international building codes and Department of Transportation requirements, including:

ACI 318 Type 1
(125% Specified
Yield)

AS3600

ASTM F 432-95

Turkish Seismic
Code 2018

ACI 318 Type 2
(Specified Ultimate)

Eurocode 2

GOST 34278

US Army Corps
of Engineers

Detail

HYBRID EXPANSION BOLTS

Regbar Hybrid Expansion Bolts is a unique combination rock bolt system. It offers the combined advantages of anchoring and then a fully filled rock bolt at the same time. 3 Option is possible to use for this system (120 / 160 / 240 Kn)



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HYBRID EXPANSION BOLTS

Product Code	Minimum Breaking load Capacity F [kn]	Profile Diameter [mm]	Length of Bolt G[kg/m]	Type	Thickness [mm]	Tube Diameter [mm]	Expansion Pressure (bar)
RCHEB12	120	28	0,89	Hybrid Expansion Bolts systems High-strength reinforcement Geotechnical Rods	2	41	300
RCHEB16	160	36	1,21		2	54	240
RCHEB24	240	37	1,58		3	54	300

SPLIT FRICTION BOLTS

Regbar Split Friction Bolts are designed to be used in the tunnels and minings, especially in the machine, wall or rocks. Our products are high Standard and manufactured from the cold-rolled" steel in accordance with the standards of ASTM, A 108 1



Product Code	Load Capacity F [kn]	Domed plate [mm]	Type	Thickness [mm]	Tube Diameter [mm]	Weight (kg/m)
RCSFB33	80	(150 x 150 x 4)	Split Friction Bolt systems High-strength reinforcement Geotechnical Rods	2	33	1,4
RCHEB39	100	(150 x 150 x 4)		2,5	39	2,16
RCHEB46	150	(150 x 150 x 4)		3	46	2,83

GFRP FIBER ROCK BOLT

Regbar Fiberglass Composite Rockbolts (FRP Composite Rockbolt) is a composite reinforcement used instead of corroded classic steel reinforcements. It has higher strength than steel, lighter, tested and approved. It can be used in many fields.

Main advantages:

Corrosion Resistance ,Robustness,Durabilit,Easy placement & Easy cutting,Electromagnetic neutrality,Lightness Greater tensile strength than steel,Transparent to magnetic fields and radio frequencies,Electrically and thermally non-conductive, Chloride ion and chemical attack impermeable



MACRO & MICRO SYNTHETIC FIBER

Synthetic macro fibers, which are able to be used as a primary reinforcing in the concretePolymer based, inert and does not corrodeProvides structural resistance instead of the steel mesh or the steel wireProvides crack-resistance and carries load with two different materials in its componentLong-life thanks to its synthetic structure



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Technology



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GROUND EQUIPMENT

NUT - WASHER - EYEBOLT

Properties

It contains different types of Nut & Washer Couplers. Regbar manufactures each coupler in accordance with the norms to facilitate your field application. You can contact us to be informed about various nuts, washers and eye bolts. Hexagon nuts, fibered nuts, wheel nuts, rail nuts, flange nuts, fly nuts, square nuts and nuts with rotating washer produced by Regbar conform to DIN 934, DIN 6915 ASME B18 2.2, EN ISO 4032, DIN 928, DIN 985, DIN 935, DIN 1587, EN ISO 4033, DIN 982 and DIN 980 standards.



Nut washer Eyebolt are designed to meet or exceed major international building codes and Department of Transportation requirements, including:

DIN 934, DIN 6915 ASME B18 2.2, EN ISO 4032, DIN 928, DIN 985, DIN 935, DIN 1587, EN ISO 4033, DIN 982 and DIN 980

Detail

EYEBOLT

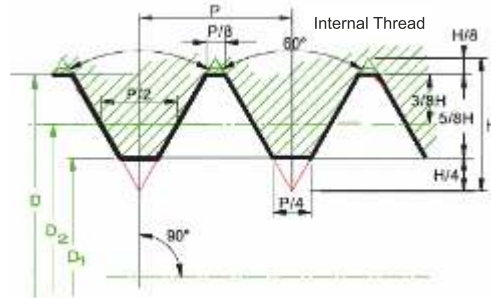
Certified eye bolts and ring bolts suitable to bear Eye Bolt Regbar Concrete blocks, concrete cylinders, machinery, equipment, template cages, precast concrete and suspension systems are produced in accordance with safety factors pursuant to DIN 580. If proper bolt assembly and lifting procedures are not performed, the loads may slip or fall.



NUT

- ▶ Hexagon nuts
- ▶ Fiber nut
- ▶ The wheel nut
- ▶ Railway Rail Nuts

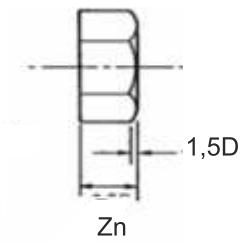
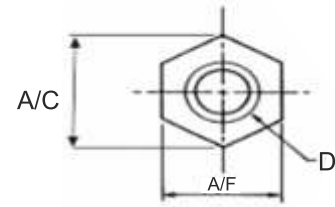
- ▶ Flanged nuts
- ▶ Butterfly nut
- ▶ Barrel Nuts



$$\begin{aligned}
 H &= 0,86603 P \\
 H/4 &= 0,21651 P \\
 H/8 &= 0,10825 P \\
 3/8 H &= 0,32476 P \\
 5/8 H &= 0,54127 P \\
 H/6 &= 0,14434 P = R \\
 0,61343 P &= H_3
 \end{aligned}$$

D = Major diameter (Int'l)
 D₂ = Effective (Pitch) dia (Int'l)
 D₁ = Minor diameter (Int'l)
 h₃ = Full height of external thread

Nominal Size		Thread.	Nut Diameter		Nut
		Pitch	Major (D)	Minor (D ₁) Max - min	Thick (Zn)
M3	Nut tolerance class 6H are dimensioned in BS3692	0,5	3	2,599 - 2,459	2,4
M4		0,7	4	3,422 - 3,242	3,2
M5		0,8	5	4,334 - 4,134	4
M6		1	6	5,153 - 4,917	5
M8		1,25	8	6,912 - 6,647	6,5
M10		1,5	10	8,676 - 8,376	8
M12	Thread form to BS 3643	1,75	12	10,441 - 10,106	10
M16		2	16	14,210 - 13,835	13
M20		2,5	20	17,744 - 17,294	16
M24		3	24	21,252 - 20,752	19
M30		3,5	30	26,771 - 26,211	24
M36		4	36	32,270 - 31,670	29



- ▶ A falling load may lead to serious injuries or death.
- ▶ Regular Nut Eye Bolt G-291
- ▶ Inspection / Maintenance Safety:
- ▶ Always check the bolt before use.
- ▶ Never use a bolt that shows indications of wear or damage.
- ▶ Never use a bolt if the eye or stem is twisted or extended.
- ▶ Always ensure that the shaft and holes are threaded.



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WASHER

Nominal Size		Washer Diameter		Washer Thickness
		Internal max - min	External max - min	Thickness max - min
M5	Black Washers are dimensioned in BS4320: 1968 For DIN125 Plain Washers (Overall dimensions) Din 125 Washer	5,8 - 5,5	10,0 - 9,2	1,2 - 0,8
M6		7,0 - 6,6	12,5 - 11,7	1,9 - 1,3
M8		9,4 - 9,0	17,0 - 16,2	1,9 - 1,3
M10		11,5 - 11,0	21,0 - 20,2	2,3 - 1,7
M12		14,5 - 14,0	24,0 - 23,2	2,8 - 2,2
M16		18,5 - 18,00	30,0 - 29,2	3,6 - 2,4
M20		22,6 - 22,0	37,0 - 35,8	3,6 - 2,4
M24		26,6 - 26,0	44,0 - 42,8	4,6 - 3,4
M30		33,8 - 33,0	56,0 - 54,5	4,6 - 3,4
M36		39,8 - 39,0	66,0 - 64,5	6,0 - 4,0
M42		45,8 - 45,0	78,0 - 76,5	8,2 - 5,8
M48		53,0 - 52,0	92,0 - 90,0	9,2 - 6,8



Regbar Construction Technology



GROUND EQUIPMENT

BOLTS STUDS

Properties

Bolts:

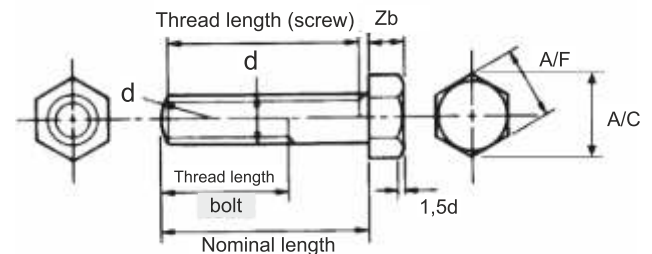
Regbar manufactures Hexagon-Head bolts, Countersunk head bolts, Allen head bolts, Round Head bolts, Square head bolts, Wheel bolts, Eye bolts, Headless Setscrew screws, T-head bolts, Round head bolts, Heavy-duty bolts, Pre-loading bolts, Bolts without pre-loading, Ribbed iron bolts, Insulator bolts conforming to EN 14399-3 HR Bolts, EN 14399-4 HV Bolts, EN 15048, EN 14399-10 TCB Bolts, DIN 6914, DIN 7991, DIN 912, DIN 912, DIN 931, EN ISO 4014, DIN 933, EN ISO 4017, DIN 960, EN ISO 8765 and DIN 961 standards.



Bolt studs are designed to meet or exceed major international building codes and Department of Transportation requirements, including:

EN 14399-3 HR Bolts, EN 14399-4 HV Bolts, EN 15048, EN 14399-10 TCB Bolts, DIN 6914, DIN 7991, DIN 912, DIN 912, DIN 931, EN ISO 4014, DIN 933, EN ISO 4017, DIN 960, EN ISO 8765 and DIN 961

Detail BOLTS



Nominal (D) Size	Thread Pitch	Standarts	Bolt dia			Bolt Head		Bolt Nut	
			Major(d) max - min	Minor(d3) max - min	Pitch Diameter (d2) max - min	Thick (Zb)	Acc/Flats (A/F) max - min	Acc./Corn (A/C)	
M3	0,5	Thread Form to BS 3643	2,980 - 2,874	2,439 - 2,272	2,655 - 2,580	2,125	5,50 - 5,38	6,4	
M4	0,7		3,978 - 3,838	3,220 - 3,002	3,523 - 3,433	2,925	7,00 - 6,85	8,1	
M5	0,8		4,976 - 4,826	3,869 - 4,110	4,456 - 4,361	3,65	8,00 - 7,85	9,2	
M6	1		5,974 - 5,794	4,891 - 4,596	5,324 - 5,212	4,15	10,00 - 9,78	11,5	
M8	1,25		7,972 - 7,760	6,272 - 6,619	7,160 - 7,042	5,65	13,00 - 12,73	15	
M10	1,5		9,968 - 9,732	8,344 - 7,938	8,994 - 8,862	7,18	17,00 - 16,73	19,6	
M12	1,75		11,966 - 11,701	10,072 - 9,601	10,829 - 10,679	8,18	19,00 - 18,67	22,1	
M16	2		15,962 - 15,682	13,797 - 13,271	14,663 - 14,503	10,18	24,00 - 23,67	27,7	
M20	2,5		19,958 - 19,623	17,252 - 16,624	18,334 - 18,164	13,215	30,00 - 29,67	34,6	
M24	3		23,952 - 23,577	20,701 - 19,955	22,003 - 21,803	15,215	36,00 - 35,58	41,6	
M30	3,5		29,947 - 29,522	26,158 - 25,306	27,674 - 27,462	19,26	46,00 - 45,38	53,1	
M36	4		35,940 - 35,465	31,610 - 30,654	33,342 - 33,118	23,26	55,00 - 54,26	63,5	

HEADQUARTERS

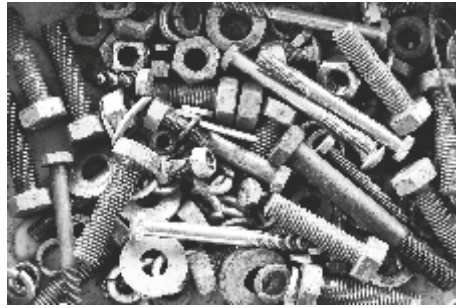
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Pereulok No: 24/8 125047
Moscow / RUSSIA



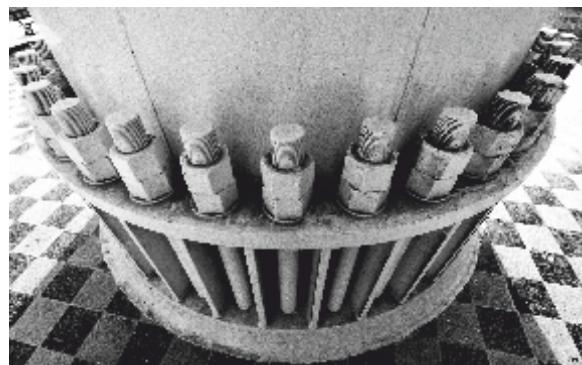
STUDS

Regbar also manufactures full length (overall) studs, trapezoid studs, double-edged threaded studs and u-bolts. Regbar studs are manufactured in accordance with ASTM A722-07 and AASHTO M275 standards. Provides an additional 130 degrees anti-roll test when required.

Features:

Regbar studs are manufactured in accordance with the standards of ASTM A722-07 and AASHTO M275. It can pass 135 ° additional cornering test, if required. The test loading shows Regbar 150 ksi All - Thread- Bars which meets or exceeds the post-stressing rod and rock anchorage criteria determined by the Message Stressing Institution including the dynamic test requirements beyond 500.000 loops.

METRIC THREAD CHART				
NOM. DIA.	PITCH mm	DIAMETER mm	DIAMETER inch	NUT size
M10	1,50	10	0.3937	17
M12	1,75	12	0.4724	19
M14	2,00	14	0.5512	22
M16	2,00	16	0.6299	24
M18	2,50	18	0.7087	27
M20	2,50	20	0.7874	30
M22	2,50	22	0.8661	32
M24	3,00	24	0.9449	36
M27	3,00	27	1.063	41
M30	3,50	30	11.811	46
M33	3,50	33	12.992	50
M36	4,00	36	14.173	55
M39	4,00	39	15.354	60
M42	4,50	42	16.535	65
M45	4,50	45	17.717	70
M48	5,00	48	18.898	75
M52	5,00	52	20.472	80
M56	5,50	56	22.047	85
M60	5,00	60	23.622	90
M64	6,00	64	25.197	95
M68	6,00	68	26.772	100
M72	6,00	72	28.346	105
M76	6,00	76	29.921	110
M80	6,00	80	31.496	115
M85	6,00	85	33.464	120
M90	6,00	90	35.433	130
M100	6,00	100	3.937	145
M110	6,00	110	43.307	155
M125	6,00	125	49.212	180
M140	6,00	140	55.118	200
M160	6,00	160	62.992	230



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GROUND EQUIPMENT

CONCRETE ANCHOR SYSTEMS

Properties

Regbar Column Anchor Systems are designed especially for the assembly of machinery, columns or power poles in constructions. Thanks to its two-piece feature, it contributes to placement of the concrete on a line. Our products are of high standard; they are made of cold-rolled steel in accordance with ASTM, A 108 standards. Assembly of connectors and couplers are made manually.



Detail

You can procure a wide range of products from Regbar for concrete anchor systems instead of cast anchor. With its experienced team, Regbar offers production and field services of J-U and L anchor systems used in many high profile projects.

Teel Type	Bar Diameter	Recommended Safe Working Load to 2:1 Safety Factor	Average Ultimate Strength	Drill Hole	Embedment Depth		Minimum Edge Distance		Part Number B8 S Cone / Shell B7 S Cone / Shell
					3000 PSI Concrete	5000 PSI Concrete	3000 PSI Concrete	5000 PSI Concrete	
B1 S Smooth Rod	3/8" (10 mm)	4.9 kips (21.8 kN)	9.8 kips (43.6 kN)	1-5/8" (41 mm)	6" (152 mm)	5" (127 mm)	4.8" (121 mm)	4.2" (107 mm)	R4M03RB0 / R4A13 (R4MC3RB0 / R4A13)
	1/2" (12 mm)	9 kips (40.0 kN)	18 kips (80.1 kN)	1-5/8" (41 mm)	7" (178 mm)	6" (152 mm)	6.4" (163 mm)	5.6" (142 mm)	R4M04RB0 / R4A13 (R4MC4RB0 / R4A13)
B7 S All-Thread Coild Rod	5/8" (16 mm)	11.3 kips (40.0 kN)	22.5 kips (100 kN)	1-5/8" (41 mm)	8" (203 mm)	7" (178 mm)	7.7" (196 mm)	6.7" (170 mm)	R4M05RB0 / R4A13 (R4MC5RB0 / R4A13)
B8 S All-Thread N.C. Rod	3/4" (20 mm)	18 kips (80.0 kN)	36 kips (160 kN)	1-5/8" (41 mm)	10" (254 mm)	9" (229 mm)	9.2" (234 mm)	8.1" (206 mm)	R4M06RB0 / R4A13 (R4MC6RB0 / R4A13)
	7/8" (22 mm)	29 kips (129.0 kN)	58 kips (258 kN)	1-5/8" (41 mm)	12" (305 mm)	11" (279 mm)	11.4" (290 mm)	10" (254 mm)	R4M07RB0 / R4A13 (R4MC7RB0 / R4A13)



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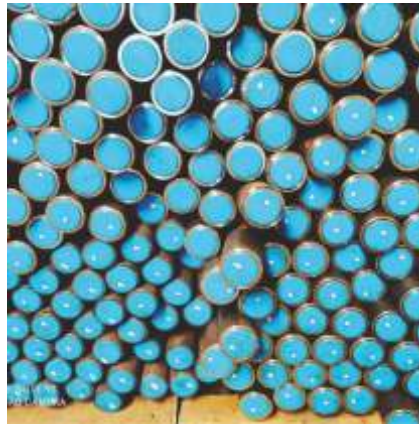
PLASTIC SPACERS ELEMENTS

PLASTIC SPACERS ELEMENTS / PLASTIC PROTECTIVE CAPS

Concrete Caps;

They are designed not to lose zero-zero connection end of the element embedded in concrete especially in subway and toptdown projects. Following the concrete casting with this system added to zero rebar end, taper tap is removed and a better connection is ensured with frontal opening.

Corrugated Pipe is made of corrosion-resistant plastic raw material. Despite its light weight, it has a shock-absorbing property.



Rebar Caps

Rebar caps are produced in order to prevent corrosion of the rebars after concrete casting in the field, in the stock area or damages of thread profiles. Each diameter is coded with a separate color code.

Anchorage Spacers

Anchorage Spacers do not interfere with the flow of injection material during the injection of the soil. It holds the anchor parts in one piece and protects product integrity.

Anchorage Connectors are designed with porous eyes as Anchorage Spacers so they don't prevent the flow of injection.

Anchorage Pipe Caps

They are designed to be attached to starting and ending points of anchorage pipes. They prevent possible deformation of the material with its impermeability.



Rock Bolt Spacer

They regularly tighten the anchorage elements and keep them together due to their structure which doesn't prevent flow of the injection material in soil anchorages but they also separate them from each other and allow the injection cover every element. Thus they increase the adherence. These pieces increase adherence especially in rehabilitation of soil rock bolts.



What is Antirust Margin ?

Antirust Margin is technically defined as "the thickness measured up to the end of the concrete outside the most outer reinforcement inside a concrete element". We can talk about many reasons that cause corrosion in the reinforced concrete rebars. Risk of corrosion increases due to the environment especially in projects close to marinas, dams and sea. In order to make the concrete and iron work properly on the same axis, Antirust Margin pieces take on an important task to protect irons from external effects, ensure desired rebar density and full protection against corrosion.

Heavy Floor Antirust Margin

It is a footed system antirust margin which ensures the antirust margin range in horizontal iron reinforcements in the foundations. These plastic equipment can be easily used in heavy iron equipment.

Profile Type Plastic Antirust Margin

Rail type mesh floor antirust margin is preferred for large area flooring works and paneled wire mesh as it provides great convenience and facilitates the process. The upper hook is designed to carry iron. It can be conveniently used in horizontal and vertical flooring. It can be extended by attaching them to each other with the mounting apparatus at the ends.



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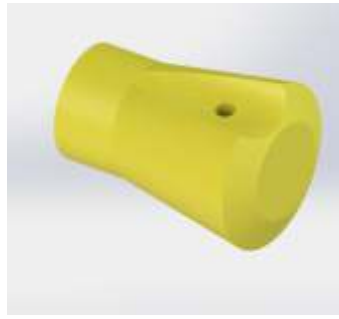
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Circular Type Plastic Antirust Margin

This type of antirust margin provides great convenience when used in wide area flooring and steel mesh, easily grips simple iron by two iron grip bulges at the top. They are laid on the surface at proper intervals.

Curtain and Column Type Antirust Margin

Ideal for use in curtain and column iron molds. They are produced in sizes suitable for iron in different diameters. Their coupling feet enable them to grip irons with different diameters. Their porous structure doesn't prevent concrete transition and form voids in the concrete. When they are attached to stirrups, they provide the desired gap between the mold and reinforcement to obtain optimum efficiency. They are manufactured in different heights in accordance with irons in different diameters.

Concrete Spacer

Concrete Spacers are used without wires in spring applications, and in vertical applications by connecting to the reinforcement steel through the hole in the middle with a binding wire.



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solutions
for better
future



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