

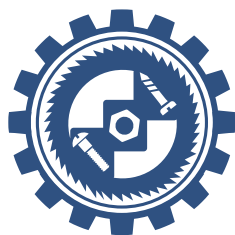
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Quality Fasteners & Clamps

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About us:

KBV Industries India Pvt. Ltd., an ISO 9001:2008 company, provides fastening solution to the construction companies and professionals. Our products, systems and services offer cutting edge solution for construction industries. We are located in Delhi, India and our pledge is to supply the best quality fasteners at competitive prices and deliver what we promise.



Introduction:

This literature on the performance data of the anchors in our wide range of construction related products is a deliberate effort by Fasten Enterprises to address the issues that are often raised by our clients and engineers alike. It is not intended to be a know all for all the anchors that are presently available in the market but rather as a guide for our clients in the selection process of the various types of anchors that we have in our range.

1.1 Base Material

The many types of material available on site that need to be fastened or fastened onto, create in itself a host of application related problems. The most commonly used base material is reinforced concrete and the grade of concrete is very important to verify the loading performance of the anchors that is exerting compressive forces onto it. Masonry materials comprise hollow and solid red bricks, concrete bricks and ALC. Most mechanical anchors can work in concrete but not for the hollow brocks and ALC. On-site testing is required for the latter types of material.

1.3 Corrosion Resistance

Fasten Enterprise is able to provide different types of plating, coating and corrosion resistant materials (SUS 304,316) to meet the specific requirements of the project depending on the level of corrosion protection. Refer to the chapter on corrosion resistance.

1.4 Quality Assurance

Upholding the tenet of "quality for life, management for benefit, service for market, technology for development", the company will endeavour to provide excellent products and service with solid technical force, advanced equipment and strict quality management system.

KBVTM
Industries



What causes Steel Anchors to Corrode Over Time?

There are four physical factors-pollution, rainfall/humidity, air temperature and galvanic erosion-that affect the corrosion rate.

Most Corrosive

1. Pollution

High pollution levels, especially SO₂
Chlorides and solid particles

2. Rainfall/humidity

Moderate rainfall with high humidity
persisting over long periods

3. Air Temperature

Moderate air temperature (e.g., 50° F-
68° F) with high humidity and
condensation

Least Corrosive

Low pollution levels

Low rainfall with low humidity

Low air temperatures (especially extended
periods below 32°F); High air temperatures
with low humidity

Galvanic Erosion

Also called bi-metallic corrosion, galvanic erosion occurs when two metals of different electro-chemical potentials come in contact. An electrical circuit is set up if the junction is bridged by moisture and the resultant current will considerably increase the corrosion rate of the less noble material.

Galvanic Series of Metals and Alloys



As indicated, 304 and 316 stainless steels are among the most noble metals available to resist corrosion and galvanic reaction.

Heavy Duty Shield / Loose Bolt / Projection Bolt / Hook Bolt / Eye Bolt Anchors

3 Shield Anchor



4 Shield Anchor



Bolt Size (mm)	Bolt Length (mm)	Anchor Length	Drill Dia	Drill Depth Min
M6	50-75	45	12	50
M8	60-90	50	14	55
M10	70-100	60	16	65
M12	90-120	75	20	90
M16	125-150	115	25	125
M20	150-200	130	32	140
M24	200-250	150	38	160

Material: 4.6 Steel with (YZP / WZP), SS 202/304/316

Wedge Anchors (Thru Bolt)

Features:

- Drill bit sizes same as stud size.
- Easy expansion with the anti rotation lug on the expansion Clip.
- Different length of thread to afford adjusting with shims on site.

Uses: Scaffolding brackets, Cladding support, Brackets, Fire, Water and Sewerage Pipe brackets.

Base Material: Concrete, Hard Stone.

Material: Carbon steel, electro-galvanised to 5 micron. Hot dipped galvanised, SS 202, 304, 316.

Anchor Size (mm)	Anchor Length (mm)	Drill Dia	Pull Out Load/Kgs
M6	40-95	6	750
M8	50-120	8	1000
M10	70-125	10	1300
M12	80-150	12	2000
M16	100-200	16	2900
M20	125-250	20	5200
M24	200-400	24	8000



Drop in Anchor

Features:

- Built-in hammer set expansion plug assures full expansion of the flush anchor.
- Fire resistance and Shallow Embedment.

Uses: Fixing of scaffolding tie-back, suspended ceiling.

Base Material: Concrete, Hard Stone.

Material: Carbon steel, electro-galvanised to 5 micron. SS 304, 316.

Anchor Size (mm)	Anchor Length (mm)	Drill Dia	Pull Out Load/Kgs
M6	25	8	950
M8	30	10	1300
M10	40	12	1900
M12	50	16	2800
M16	65	20	4800
M20	80	25	5800



Sleeve Anchor

Features: Pre-assembled with bolt, nut, washer for quick and easy on-site installation.

Uses: Fixing of brackets, Life guide rails.

Base Material: Concrete.

Material: Carbon steel, electro-galvanised to 5 micron. SS 304, 316.

Bolt Size (mm)	Bolt Length (mm)	Sleeve Length (mm)	Drill Dia
M6	50-80	35-65	9.5
M8	60-100	45-85	12
M10	70-120	50-90	14
M12	80-200	55-150	18
M16	75-250	60-200	22



Tam Anchor

Features: Suitable for overhead and ceiling work.

Uses: Fixing of machinery and equipment, railing, gratings & supports.

Base Material: Concrete.

Material: Carbon steel, electro-galvanised to 5 micron. SS 304, 316.



Anchor Size	Anchor Length (mm)	Drill Dia (mm)	Drill Depth (mm)	Setting Depth Min (mm)
M6	45	10	50	45
M8	50	12	55	50
M10	55	15	60	55
M12	70	18	75	70

Hit Anchor / Hammer Driven Anchor

Features: Expansion assured through driving the hardened pin through the slotted anchor base with Hexagon nut and captive washer.

Uses: Fixing of brackets, stadium seats, wooden rafters, machine bases.

Base Material: Concrete, Hard Stone.

Material: Carbon steel, electro-galvanised to 5 micron. SS 202, 304, 316. Hardened steel for pin.

Anchor Size (mm)	Anchor Length (mm)	Drill Dia (mm)	Pull Out Load/Kgs
M6	50-100	6.4	450
M8	60-100	8.5	700
M10	60-150	10.5	1200
M12	75-150	12.7	1800
M16	100-200	17	3200
M20	100-250	21	4500
M24	150-300	25	6000



Chemical Anchor Studs

Features: Heavy duty fixing without radial influence of expansion forces can be used close to edges. Accurate drill depth is necessary.

Uses: With chemical capsules

Base Material: Concrete, Hard Stone.

Material: Carbon steel, electro-galvanised to 5 micron. SS 304, 316.

Stud Size	Max Thickness Fastened	Hole Size	Hole Depth
M8x110	16	10	80
M10x130	22	12	90
M12x160	30	14	110
M16x190	38	18	125
M20x260	70	25	170
M24x300	65	28	210
M30x380	70	35	280



Heavy Duty Safety Plus Steel Sleeve Anchor

Anchor Size (mm)	Anchor Length (mm)	Drill Dia (mm)	Sleeve Length (mm)	Hole Depth (mm)
M10	100	14	85	110
M12	130	18	100	140
M16	160	24	140	175
M20	200	28	180	220

Available in Carbon Steel (YZP, WZP), SS 304, 316



Bolt Anchor

Anchor Size (mm)	Anchor Length (mm)	Drill Dia (mm)	Sleeve Length (mm)	Pull Out Load/Kgs
M6	50	9.5	30	750
M8	65-70	12	35	1200
M10	72-100	14	40	1400
M12	100-150	17	50	2200
M16	100-200	22	60	2850
M20	160-200	25	80	4300



Tie Wire Anchor

Size	Head Dia. (mm)	Drill (mm)
M6x50	35	6
M6x60	35	6
M6x120	35	6

Yellow zinc plated, white zinc plated (Cr3 & Cr6)



Ceiling Drive Anchor

Size	Head Dia. (mm)	Drill (mm)	Load (kgs)
6x35	14.8	6	390
6x65	14.8	6	390

Yellow zinc plated, white zinc plated (Cr3 & Cr6)



Brass Anchor

Features: Economical and high loading, fire resistance.

Uses: Fixing of scaffolding tie-back, suspended ceiling, Wire-mesh for debris control racking.

Base Material: Concrete, Hard Stone.

Material: Brass.

Anchor Size (mm)	Anchor Length (mm)	Drill Dia
M4	16	5
M5	18, 22	6.3
M6	22, 23	8
M8	28	10
M10	32	12
M12	38	15
M16	42, 45	24



Frame Fixing Anchor

Features: Frame fixing anchor with two wings, three wings, hammer drive anchor countersunk head with pozi head screw.

Uses: Fixing for wooden, metal, aluminum door, window and frame fixing.

Base Material: Concrete, Hard Stone, Brick

Material: (Sleeve) PA/PE; (Screw) Steel / Stainless Steel

Anchor Size (mm)	Drill Dia (mm)	Plug Length	Screw Size (mm)
8x60	8	60	5.2x63
8x80	8	80	5.2x83
8x100	8	100	5.2x103
8x120	8	120	5.2x123
10x80	10	80	6.8x83
10x100	10	100	6.8x103
10x120	10	120	6.8x123
10x140	10	140	6.8x143
10x160	10	160	6.8x163



Nylon Wall Plug

Anchor Size (mm)	Plug Length (mm)	Drill Dia (mm)	Screw Size (mm)
M6	30	6	3.5-5.0
M8	40	8	4.5-6.0
M10	50	10	6.0-8.0
M12	60	12	8.0-10.0



Window Frame Screw (Concrete Screw)

Size (mm)	Screw Length (mm)	Drill Dia (mm)
7.5	52, 72, 92, 112, 122, 132, 152, 182, 202, 201	6



Window & Door Fixing Fasteners

Features: Frame fixing anchor with HEX Head and CSK Head for fixing doors and windows.

Uses: Fixing for wooden, metal, aluminum door, window and frame fixing.

Base Material: Concrete, Brick

Material: (Sleeve) PA/PE; (Screw) Steel / Stainless Steel

Anchor Size (mm)	Drill Dia (mm)	Plug Length	Screw Size (mm)
10x80	12	80	8 x 80
10x100	12	100	8 x 100
10x120	12	120	8 x 120
10x140	12	140	8 x 140



Available in : Hex Head & CSK Head

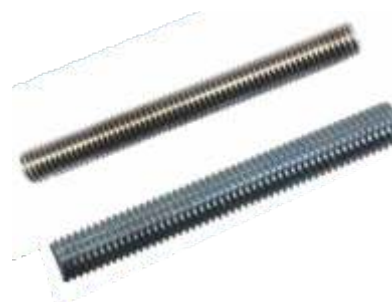
Thread Rod

Size: M6 - M30

Length: 1 mtr., 2 mtr., 3 mtr.

Material: Carbon Steel 4.8, 8.8, SS 304, 316

Surface: Zinc Plated, Hot Dipped Galvanised, Heat Treatment



Stone Cladding Clamps

Material: Stainless Steel - 202,304, 316
Thickness: 2.5mm, 3mm, 4mm, 5mm, 6mm

Type - A



Type - B



Type - C



Type - D



Type - E



Type - F



SS Flat Head Bolt



SS Pin with Ring



U - Clamp

Material: MS, SS

Advantage:

Easy to fix pipes with anchors

Clamp Size (mm)	Clamp Size (inches)	Width x Thickness (mm)
25	1"	25x1.5
61	2"	25x2
90	3"	30x2.5
115	4"	30x2.5
141	5"	30x3
166	6"	30x3.5
215	8"	30x4



Size: 3/4", 1/2", 1", 1 1/4", 1 1/2", 2", 2 1/2", 3", 4", 6", 8"

Sprinkler Hanger

Material:

Carbon Steel

Advantage:

Easy to fix pipes with thread bar

Clamp Size (mm)	Clamp Size (inches)	Width x Thickness (mm)
25	1"	25x1.5
50	2"	25x2.5
80	3"	25x2.5
100	4"	25x2.5
125	5"	30x3
150	6"	30x3



Size: 3/4", 1/2", 1", 1 1/4", 1 1/2", 2", 2 1/2", 3", 4", 6", 8"

Pipe Support Clamps

Clamping Range (mm)	Size (inches)
32-36	1"
60-64	2"
87-92	3"
113-118	4"
138-142	5"
160-167	6"
215-200	8"



U-Bolt



Size: 3/4", 1/2", 1", 1 1/4", 1 1/2", 2", 2 1/2", 3", 4", 6", 8"

Clevis Hanger



Size: 1", 1 1/4", 1 1/2", 2", 3", 4", 6", 8"

Bolts

Standard: Din 931, 933, 558, 7991, 603, 6921, 912

Material: Steel

Class: 4.8, 5.8, 6.8, 8.8

Diameter: M5 - M20

Length: 10mm - 250mm



Nuts

Standard: Din 934, 555, 936, 439, 6923, 557, 562, 6330, 6334, 1587, 982, 985, 980, 917

Material: Steel / Stainless Steel / Brass

Class: 5 / 8 / 10 Gr.2 / Gr.5 / Gr.8

Diameter: M2 - M20, 1/8" - 3"



Washers

Standard: Din 125, 9021, 127, 440, 436

Material: Steel, Stainless Steel

Diameter: M3 - M30



Screws



Dry Wall Screw

Diameter: 3.5 - 4.8 mm

Length: 19 - 110 mm



Chipboard Screw

Standard: DIN 7505

Diameter: 2.5 - 4.5 mm

Length: 10 - 100 mm



Self Drilling Screw

Standard: DIN 7504

Material: Steel with EPDM washer

Surface: Zinc Plated



Hexhead Wood Screw

Standard: DIN 571

Diameter: M5-M20 1/4" - 3/4"

Foundation Bolt

En8, 8.8, 10.9
HDG, Plain, Zinc Plated



Concrete Strength

The safe static load (SSL) and failure loads shown in the products specific tables are for 30N/mm² concrete unless otherwise stated. For other strength concrete (Between 20 and 50N/mm²) the equivalent tensile load can be calculated using the following empirical formula.

$$\frac{\text{Tensile SSL} = \text{Tensile}}{\text{SSL in 30N/mm}^2 \text{ concrete}} \times \sqrt{\frac{\text{Substrate strength}}{30}}$$

$$\text{Tensile SSL in 30N/mm}^2 \text{ concrete} = \text{Tensile SSL in 30N/mm}^2 \text{ concrete} \times \sqrt{\frac{20}{30}}$$

$$= \text{Tensile SSL in 30N/mm}^2 \text{ concrete} \times (0.82)$$

Hence the tensile safe working load in 20N/mm² concrete will be 18% less than the figure shown in the table for 30N/mm² concrete. The calculation is only valid for tensile loads and cannot be applied to shear loads or failure loads. The formula is empirical.

Units & Conversion Factors

Metric units are used throughout this catalogue. For conversion to or from imperial units use the following factor:

Loads
in kiloNewtons - **kN**

Tightening Torque
in Newton meters - **Nm**

Dimension
in millimeters - **mm**

Concrete Strength
in Newton per square millimeter - **N/mm²**

Loads

1kN	=	224.8lbf	=	102.0kgf
1kgf	=	9.807N	=	2.205lbf
1lbf	=	4.448n	=	0.45kgf
1tonf	=	2240lbf	=	9.964kN
1Pa	=	1N/m ²		
1Mpa	=	1N/mm ²		

Dimensions

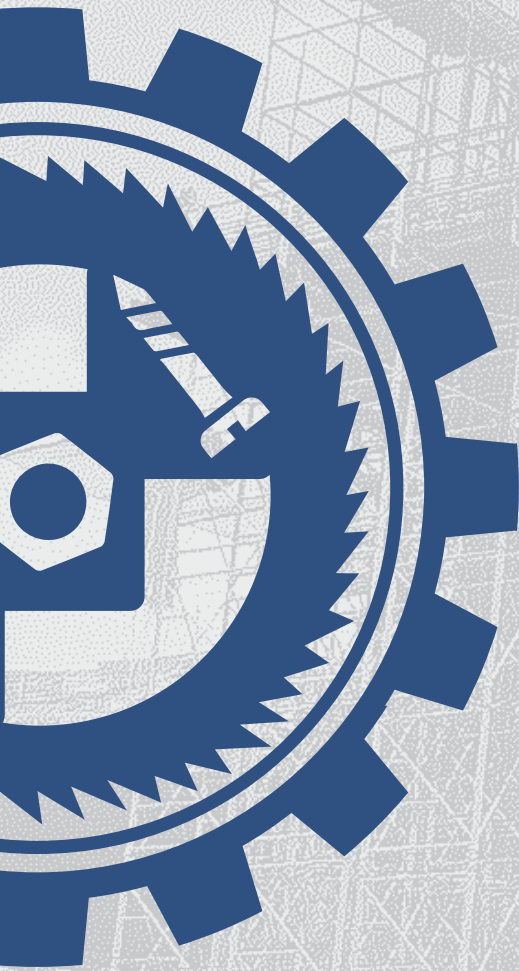
1mm	=	39in0.0
1in	=	25.4mm

Tightening Torque

1Nm	=	38lbf ft 0.7	0.102kgf m
1lbf ft	=	1.356Nm	

Concrete strength

1N/mm	=	145.0lbf/in ²	=	1MPa
1lbf/in	=	0.00689N/mm ²		



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