

SANFIELD (INDIA) LIMITED, a company serving the requirements of the Construction & Infrastructure sector since 1994 is now a Group Company of MAURER SE Germany, an ENGINEERING Group of Companies in existence since **1876**.

SANFIELD (INDIA) LIMITED is the exclusive designers, manufacturers and installers of a wide range of HIGH PERFORMANCE, SPECIALIZED CONSTRUCTION RELATED PRODUCTS, manufactured in Technical collaboration with various world renowned Companies.

SANFIELD (INDIA) LIMITED with the assistance of its parent Company and backed by the vast experience and expertise of various leading Companies of the world provides a single source responsibility from DESIGN, MANUFACTURING, TESTING, MATERIAL SUPPLY, INSTALLATION AND AFTER SALES SERVICES for all its product range.

SANFIELD (INDIA) LIMITED is approved by **MORT & H (Ministry of Road transport and high ways)** for all types of Expantion joints and Structural bearings without any restrictions on their movement capabilities . We also have **RDSO** (Research Design and Standards Organization) Ministry of Railways (GOI) Approval for BRIDGE BEARINGS, EXPANSION JOINTS, STEEL GIRDER FABRICATION.

WE OFFER BELOW PRODUCTS AND SERVICES :

- O Movement Joints and Bearings for application in Bridges and Buildings.
- MSM Spherical Bearings (with Modified Low Friction Sliding Element), Fatigue Resistant Anti

Uplift Spherical Bearings, Sliding Isolation Pendulum (SIP) Bearings.

- Structural Protection Systems (STU/LUD, Dampers, Snubbers, Anti-seismic Devices) for use in Bridges & Buildings.
- O Architectural Expansion Joint System for use in Buildings and other Applications.
- POT/POT-cum-PTFE Bearings, Elastomeric and Side Stopper Bearings. \bigcirc
- Repair and Rehabilitation of Structures, Replacement of failed Joints and Bearings. \bigcirc
- O Pre-Stressing Systems for Bridges and Buildings. (Bonded & Un-bonded Post-Tensioned Slabs)
- Post Tensioned Inclined and Vertical Anchors. \bigcirc
- Mechanical Rebar Splicing Systems (Bar Couplers) for use in Building and other infra projects. \bigcirc
- Fabrication of Steel Girders (approved from Indian Railways / RDSO).
- Advanced Waterproofing Systems. \bigcirc
- Gas Pressure Welding in association with DAIA Corporation, Japan. \bigcirc
- Ecobox , FRP Bar, PT Bar. \bigcirc
- Lifting Anchor, Single wire loop box. \bigcirc
- Sonic Tubes For Metro construction.

SIL ECOBOX & COUPLER BOX

Sanfield Ecobox System is a smart and easy to install method of maintaining continuity of reinforcement at construction joints in concrete. it consists of a galvanised steel casing and pre-bent bars that are housed within the casing and are enclosed by a protective cover.

ADVANTAGES OF ECOBOX

• Unique shape guarantees a tongue and groove connection between the two concreting phase.

• The edges on the side prevent displacement of the casting when the lid is removed, improving the quality of the anchoring.

• Cardboard insert, perfectly adapts to the shape of the casing, preventing the penetration of cement slurry along the sides of the casing.

- More safe installation supported by the cardboard lid(no more hand cutting).
- No unfriendly waste of material.
- Ecobox saves coast, time and eventually money.

ADVANTAGES OF COUPLER BOX

Unique Solution for future Coupler Reinforcement.

Smart work suitable for Slip & Jump Form works. technical, design and application requirement.

Ideal for precast connecting structures.

TECHNICAL PROPERTIES



The lengths of the steel casings are 1.20 and 2.40Mtr. respectively.

MAURER Μ

EINFORCING

(Dimensions A and B) are available to order.

- The two commercial* standard length of
- Ecobox are 1.20 and 2.4 Mtr respectively.
- The width of the casing depends on the type of casing suitable to slab width
- The height of the metal casing is 30 mm approx



SIL LIFTING ANCHORS

Sanfield[®] Lifting Anchors are engineered and rigorously tested under the strictest quality assurance policy, providing the safest, yet cost competitive solution to the building industry.

Our extensive range of Lifting Anchors includes:

• Lifting Clutches our wide range of Lifting Anchors

are able to cater for the most demanding

- Face Lifting Anchors
- Eye Anchors
- Edge Lift & Hairpin Anchors



Facelift Anchors



Clutches



Recess Formers



SIL SONIC TUBES

The Crosshole sonic logging **(CSL)** was originally developed by the French National Construction Industry Research Centre **(CEBTP)** during the late 1960's. The **CSL** method is a method to verify the structural integrity of drilled shafts and other concrete piles. **CSL** tubes are usually attached to the reinforcement cage along the full length of the shafts. After concrete has been poured, the tubes are filled with water. In **CSL**, a transmitter emits an ultrasonic signal in one tube. Poor concrete between the tubes will delay or disrupt the signal.



SIL sonic tubes are Push-fit type **CSL** tubes are made by thin steel tube, with an enlarge end in a bell mouth shape. Specially designed rubber gasket for the bell mouth ensures quick installation and perfect sealing to keep the tube integrity and avoid the entry of other materials.

ADVANTAGES





1.Fast and easy installation by labours. 2.Push-fit assembly.

- 3.No welding required at job
- 4.No equipment required.

5.Easy fixing to rebar cage. 6.Push-fit mark to ensure full engagement.

site.

SIL SINGLE WIRE LOOP BOX

SIL-S-80/100/120 Product Advantages



- → High Strength Galvanized Wire Loop
- → Pre-punched nail holes for easy fixing to formwork
- → Galvanized steel casing ensuring stability during fixing and concreting
- →For construction junction between precast segments
- →The loops pop-up automatically ensuring time saving; no rebending is required
- → 1870 Mpa wire rope, zinc plated
- → Color coded plastic clips
- →Ideal for butt junction between wall to wall and wall to column
- Product dimension ideal for logistics and storage



MOVEMENT JOINTS

Sanfield (India) Limited is engaged in the design and production of Movement Joints since 1992 and has a vast experience of over 25 years in the field. Our parent Company Maurer Sohne is in the field for over a century. Our joints are used in **Bridges**, Flyovers, Expressways, pavements, Buildings, Dams, Jetty's and variety of other Structures. We have already produced and supplied more than **2,50,000 RM** of Bridge Movement Joints to various projects in India and Abroad.

STRIP (SINGLE) SEAL JOINTS

MAURER Strip Seal system is a unique concept for effectively sealing expansion joints in bridges and structures with movements up to 70 mm.



Single-Seal Expansion Joints are available in different versions for constructive systems exposed to traffic. In all types of constructive systems there is clear distinction between the two main functions "inflexible anchoring" and "watertight **connection**" This allows for best possible adjustment of the two components sealing profile and edge construction to the conditions of the traffic.

COMPRESSION SEAL JOINTS

Compression Seal Bridge Series seals are elastomeric compression seals which allow you to effectively seal expansion joints The elastomeric element is highly resistant to deterioration from exposure to weather, sunlight, oils and impact. Compression Seal Bridge Series seals are available in a variety of cross sections and sizes for heavy duty traffic.





Features:

• Multi web Preformed Elastomeric Seal

- Armoured Block-out nosing
- Water tightness



MODULAR EXPANSION JOINTS

NCHOR STUD

Modular Joint is capable of simultaneously allowing movement in the longitudinal, transverse and vertical directions while accommodating the structures service and seismic movements. It is designed to be functional after seismic excitation as well. The design of the modular consists of supporting edge and center beams along with support bars, which span the open joint. Sealing elements are utilized to ensure the integrity of a watertight system.

Features:

- Mechanically Locked Seals
- Seismic 3-dimensional Movement Ability
- Counter Force Control Mechanism/ Unique Swiveling arrangment for equal opening and closing of Gaps
- Resilient Support Structure
- Each and every component replaceable without breaking concrete and removing the entire Joint thus minimizing the replacement cost and most importantly the down time





FINGER JOINTS

Simple yet robust Joint System offering quick solution to structures with varying structural gaps and for applications in Structures having larger Structural gaps but nominal movements.



JOINTS WITH LOW NOISE EMMISSION

Everyone knows the "click-clack" sound when you drive across a roadway transition on a bridge. This pulsating sound is increased by unevenness of the surface diagonal to the driving direction. Successful noise reduction for our Modular Expansion Joints is achieved by welded **rhombic elements**,

Downward noise radiation can be absorbed by closing the gap in the construction by means of a folding construction. Since both of these systems are suited for **retrofitting**, they can be **installed at any** time.



RAILWAY JOINTS

Railway bridges are different, because the trains that pass bridges bring about different requirements as compared to road bridges. When trains pass, the traffic loads are higher, and in case of High Speed Railways the passing traffic is considerably faster than conventional road traffic.

DB MAT JOINTS

Various products cater for various needs, from the low cost elastoblock expansion joint to our flagship, the DB mat series. Whereas the former Two varieties are designed for ballasted tracks, MAURER also offers a conventional type of expansion joint for ballast less tracks.

All types ensure absolute water tightness.



GUIDED TIE BEAM RAIL MOVEMENT JOINTS

This particular joint is uniquely capable of handling both the structural movement to the tune of 1500-**2000 mm** yet offering freedom of the movement in rails supported on it. Thus provides a single solution for both structural and rail movement requirements saving significantly on cost.



RDSO DESIGNED JOINTS

Sanfield india Ltd is an RDSO approved Expansion Joint Manufacturer, we have complete knowledge of RDSO testing procedures, drawings and Design. We have a vast experience in supply of RDSO Designed Expansion Joints. . We are always ready to innovate and develop new Joints for the Railways.

REBAR SPLICING SYSTEM



Sanfield (India) Limited is active in the field of Slicing Systems and has in its portfolio not only threaded (parallel & taper both) but metal and grout filled splicing system solutions to fulfill any construction site requirement.

In a short span of time, **Sanfield (India) Limited** has been able to bag and execute projects from all facets of Civil Engineering starting from Bridges, Flyovers, High Rise Buildings, Residential & Commercial Complexes to Airports and even Dam Structures as well.

Technically Superior : SANFIELD reber Coupler performs like continuos reinforcement, develops strength mechanically, independent of condition of concrete. Proven cyclic performance of reber offer strength during man-made, seismic or other natural event.

BENEFITS

- ◎ Practical and economical alternative to laps.
- ◎ Fast cycle time : 30 second per thread.
- One standard coupler for all splicing requirements (Standard | Position).
- © Easy installation, no torque required.
- ◎ Shortens construction cycle times.
- ◎ Manufactured under strict quality assurance plan ISO 9001.

SANFIELD RE-BAR couplers are pre-approved for use in Metro Rail, Thermal and Nuclear Power Projects etc.

TAPER COUPLERS

END ANCHORS



MAURER

SIL GROUT-IT

Sanfield GROUT-IT provides an economic, effective

solution for design of precast elements in

Construction. Precast concrete construction

is gaining popularity worldwide, The same is

because of faster turnaround time and precise

executions. GROUT-IT compliments this need.

Sanfield is a Leading construction solution provider,

We have developed GROUT-IT system to create rebar

GROUT-IT Benefits

continuity between precast concrete elements.

1. Structural Integrity between the precast

2. Load Path Continuity, Reinforcement acts as a

sections.

continuous bar.

3. Helps overcoming misalignment issues. 4. Eliminates field wielding damage to concrete. 5. Faster Execution

6. Freedom of using mortar best suited to application.

GROUT-IT Applications

GROUT-IT coupler is designed to connect wall or column precast elements either horizontally and vertically.



COUPLER DIMENSION (in mm)

Bar size	A	В	С	D	E	Min rebar Engagement length	Max rebar Engagement length
12	61	44	150			110	125
16	61	44	182			140	155
20	65	48	260	20	25	200	225
25	68	50	285			225	235
32	81	62	290			230	245
40	95	72	340			270	290





Sanfield Bonded Strand System

Sanfield Un-Bonded Strand System



Sanfield Post-Tensioned Anchor System

"Prestressed concrete is basically concrete in which internal stresses of a suitable magnitude and distribution are introduced so that the stresses resulting from external loads are counteracted to a desired degree. In reinforced concrete members, the pre-stress is commonly introduced by tensioning the steel reinforcement."

Sanfield offers following range of products and services under this Vertical

















Post-Tensioned Anchor :

Ground Anchors are basically devices used to transmit the forces to the soil by means of Pre-Stressed tendon to anchor the Structure to the ground or to retain the slopes from collapsing.

Landmark Projects executed by Sanfield DLF Commanders Court, Chennai Hotel Horizon site Mumbai Marathon Mafatlal, Lower Parel, Mumbai Parinee Developers BKC Bandra. I-Gate Airoli

STRUCTURAL BEARINGS

Bearings with technology transfer from Granor Rubber and Engineering Pty. Limited Australia, the state-of-the-art Spherical Bearings with the Maurer developed **Special Sliding Material (MSM)** UHMWPE.

We are supplying Bearings not only to Projects in India but also successfully exporting to various prestigious projects worldwide.

Sanfield India Ltd is providing following products in this category:

MSM SPHERICAL BEARINGS



The latest **invention** and **developments** in the field of Bridge support and protection system "MSM **ELASTOMERIC BEARINGS Spherical Bearing**" have been certified to have longer durability, enhanced service and Consists of a number of Elastomer Layers performance life when compared with conventional sandwiched between steel laminates. Steel, Elastomeric or even Pot Bearings as they have Reinforcement of Steel laminate in between limitation in satisfying higher & repetitive rotation elastomer layers provides Load bearing ability while and translation requirements especially required in Translational and Rotational requirements case of Highways , Rail Bridges, long Span, are fulfilled by internal Elastomer layers deflection. Continuous, Cable Stay and Suspension Bridges. Sanfield's state of the art production facility at Bhopal (India) exercise strict quality control, 3rd Rubber party supervision, Factory Production Control (FPC) certification EN1090, different Welding qualifications as per EN & AWS and above all CE certification for MSM Spherical Bearings and Pot **Bearings**.



MAURER

MAURER MSM® is a patented, high-performance sliding material for structural bearings. In Sanfield (India) Limited initially started Pot comparison to usual PTFE, MAURER MSM® is characterized by substantially higher durability, absorption of twice as high pressure and therefore compact dimensions as well as lower friction resistances.

POT AND PIN BEARINGS

A shallow steel cylinder, called as POT is inserted with a thinner, neat fitting, disc of Elastomer which has a recess to accept the Sealing Rings. A steel Piston is then inserted into the POT and bears against the Elastomeric disc. The resulting assembly is frequently perceived as being similar to that of an



STEEL BEARINGS

A typical Roller Bearing consists of a base plate, two or more rollers and a top plate. While the Rocker & Roller Bearing is made by providing a saddle and knuckle plate on top of the rollers. For the Rocker Bearings, the same arrangement except the rollers is provided. While the Rocker & Roller Bearing permits translation as well as rotation, whereas the Rocker Bearing permits only rotation. Similarly the Roller Bearing provides only the translation but no rotation.



Anti Uplift Bearings

Requirement for design and manufacturing of Antiuplift Bearings is influenced greatly by the fact whether Uplift is in Service or Seismic only. Up-Lift Load Bearings enable the transfer and support of vertical compressive and tractive forces in every state of twist and shift. Due to the use of highperformance sliding materials - even on contact surfaces of uplifting forces – structural deformations can be absorbed repeatedly and without constraints. Up-Lift Load Bearings are particularly suitable for complex roof and bridge constructions with high changing loads and deformations, e.g. railroad bridges.



Sanfield (India) Limited is capable of designing and producing fatigue resistant Uplift Bearings

HEAVY STEEL FABRICATION

Sanfield India Ltd. having full fledged Heavy Fabrication facilities is approved by **RDSO** for fabrication of Steel Bridge & Composite Bridge Steel Girders. The Workshop is fully equipped having all the latest equipment and facilities for Girder Fabrication and has completed and supplied steel composite Girders for number of our valued Clients/organizations and many more are under fabrication.



The facilities available with us include the following:

Workshop measuring more than 12000 sq. meters. SAW welding Machine E.O.T. Cranes of capacity 5 MT to 20 MT - 6 nos. Radial Drilling Machines Nelson Stud Welding facilities. Metalizing facilities. Portable Magnetic Drilling Machines Team of qualified & experienced person to monitor the fabrication activities & to check the QA / QC



ARCHITECTURAL JOINTS



The **SIL** Architectural Expansion Joints are economical & attractive floor, wall & Ceiling joints system. The multi - cellular seals in these system snaps and locks into aluminium edge retainers

Advantages

Multi - Cellular design support pedestrian traffic & accommodates multidirectional movement. Economical snap & lock seal system for years of proven performance.

Seals available in custom colors to match or compliment surrounding area.

Applications

Walls ceiling & floors in :-Parking Decks, Commercial & Institutional Buildings. Educational Facilities. Hotels. Health care and Pharmaceutical Industries.

SAPX - SYSTEM











SDPS - SYSTEM







SA-90 : RIGHT JOINT AIRSEAL - SYSTEM





MAURER

SNPG - SYSTEM



PARKING / LANDSCAPE AREA EXPANSION JOINT SYSTEMS

AIRSEAL SYSTEM **COMPRESSION SEAL SYSTEM - WA SERIES COMPRESSION SEAL SYSTEM - WG SERIES**

WALL/COLUMN EXPANSION JOINT SYSTEMS

SLPP SYSTEM SNPK SYSTEM SNPG SYSTEM SCTR SYSTEM

ROOF EXPANSION JOINT SYSTEMS SRFL SYSTEM

Besides this, full range of Architectural Expansion Joint Systems are also available for corner locations with flexibility to adopt directional changes where transition occurs. Also, the above categories and classifications are in general and can be modified and combined with other Joint models for Specific Requirements.









Sanfield (India) Limited has to its credit the first ever application of shock transmission units in any Indian bridge structure which dates back to the year 1999. Being the pioneer in the technology of structural protection devices and specially for seismic protection, we are constantly updating ourselves with the state of art technology and products to service our customers better.

HYDRAULIC DAMPERS (MHD)

Hydraulic Dampers dissipate energy by using varying fluid viscosities. These safety devices are therefore different from usual linear-viscous dampers. MAURER Hydraulic Dampers enable a reaction force when fast motions occur which is almost entirely independent of velocity. Optimal damping can thus be achieved and limit exceeds be avoided.

ELASTOMERIC DAMPERS

Elastomeric Dampers work with specially developed elastomeric mixtures of different damping properties and are used in building construction and to damp component assemblies. The effect of these safety devices relies on deformation and is characterized by good recentring properties an reduction in constraints.

Other than the standard STU and Dampers, Sanfield range of Structural Protection Systems includes

RIGID CONNECTION DEVICES PREDETERMINED BREAK-AWAY FORCE RESTRAINTS DISSIPATORS **RECENTRING STEEL-HYSTERESIS-DAMPERS** (MRSD) **SEMI-ACTIVE DAMPERS ISOLATORS LEAD RUBBER BEARINGS**

DAMPERS APPLICATION

OLYMPIC TORCH IN SOCHI

Minich . Until February 23rd, the world is looking Sochi .While to sportsmen where in their final training, the know how of some engineers from Munich was concentrated onto the Olypic fire : it burns by way of a 45 m high torch in the SochiOlympic park, and so almost at the windy coast of the Black Sea. In order that the tower - like torch structure will not vibrate too much, three dampers were installed. Their special characteristic ; they could be calibrated on site to the occurring frequencies of vibration.





SLIDING ISOLATION PENDULUM BEARINGS

MAURER Sliding Isolation Pendulum Bearings combine the outstanding features of spherical bearings with the recentring effect according to the pendulum principle. This effect is achieved by using a curved main sliding surface. When friction occurs on the sliding surface, energy is directly dissipated in the sliding isolation pendulum bearing. Using the sliding material **MSM®** - lubricated and unlubricated - customers can choose from a wide range of friction coefficients. MAURER Sliding Isolation Pendulum Bearings meet all requirements on sliding bearings during usage according to the standards.



REPAIRS & REHABILITATION

SANFIELD (INDIA) LIMITED with an integrated Design and Project Divisions also undertake Repair and Rehabilitation of Bridges, Buildings and other structures of any complex nature such as:

Lifting of Bridge Superstructures, Realignment and Replacement of Bearings, Replacement of Failed Expansion Joints, Spray Waterproofing System, CFRP Applications, Epoxy Injection, Gunniting, Repairs of Leaching, Honeycombing, Spalling, Concrete Protection etc.



REPLACEMENT OF BEARINGS

BEFORE



REPLACEMENT OF EXPANSION JOINTS

BEFORE





Seismic Control Devices

About 20 years ago, we started protecting constructions from risk of seismic damage and has advanced development ever since. The business is getting more important every day: settlement in seismic-prone metropolitan areas is getting denser and buildings are rising higher and higher. Seismic control devices efficiently help to avoid damages on bridges, superstructures and, especially, sensitive installations such as tanks for liquefied gas storage, nuclear plant waste fuel etc. At the same time our devices minimize the negative effects of normal everyday strain. MAURER Seismic Control Devices that means numerous technological and structural engineering in-house developments that effectively protect structural systems by means of isolation and/or dissipation in the interplay of forces and motions.

STRUCTURAL PROTECTION SYSTEMS

AFTER

AFTER

SHOCK TRANSMISSION UNITS (STU) / LOCK UP DEVICES (LUD)

Shock Transmission Units are hydraulic safety devices that lock at strong impulses, such as earthquake shocks or sudden braking on bridge constructions, and therefore clamp the construction. However, they are designed to allow shifting without much resistance if slow movements occur as in everyday usage. MAURER Load Limiters are hydraulic-safety devices that limit the reaction force upward by velocity-based control of oil flow. By using such elements, construction damage caused by extreme shifting velocities can be efficiently avoided.



Sanfield has to its credit the first ever application of STU in Indian Bridges i.e. Bassein Creek Bridge. In Mumbai in the year 1999-2000.

GAS PRESSURE WELDING

SANFIELD (INDIA) LIMITED in association with **DAIA CORPORATION JAPAN** provides Gas Pressure Welding Services in the Subcontinent, Gas Pressure Welding is used to join rebar at construction.

WHAT IS GAS PRESSURE WELDING

Heat each reinforce bar at cross section by acetylene and oxygen Mixture gas at about 1,200 - 1,300 degree and put pressure then Join each bar firmly. Reinforce bar is steel which is mixed by atom of iron and carbon. Atom of them in steel are stable at normal temperature and they are Making regular arrangement. Gas pressure welding stick each reinforce bar by their join of Crystal. Then we use heat to make re-arrangement of each atom easily at each Reinforce bar joining. Both atom start to move actively by heating at once and also change Structure of crystal as before then diffuse. It means they start to be mixed of each atom.

MECHANISM OF GAS PRESSURE WELDING

HEAT AND PRESSURE



At first heating, use kangen-en (strong flame) and avoid oxidation on each join surface



Start.

Cut reinforce bar By daia saw Surface should be Right angle



Clean up at cross section. Rust, cement, paint, sand, etc. Like foreign article on surface are strictly prohibited.

Joining by habayaki (heat right and left side About 1d distance) by Chuusei-en (medium flame)



Completed join Swell size is about 1.4d to Outer diameter and 1.2d to length

GAS PRESSURE WELDING EQUIPMENT



Reinforced concrete is a common building material for construction of facilities and structures. While concrete has high compressive strength, it has limited tensile strength. To overcome these tensile limitations, reinforcing bars (rebar) are used in the tension side of concrete structures.

Product Part No.	Diameter (mm)	Bolt Ultimate load(KN)	Thread u load(Steel	ltimate kN) FRP	Cross section (mm²)	Ultimate tensile strength
SIL60-16-ER	16	165	/	45	165	1000
SIL60-18-ER	18	214	/	50	214	1000
SIL60-20-ER	20	269	80	60	269	1000
SIL60-22-ER	22	330	100	60	330	1000
SIL60-24-ER	24	360	150	70	398	900
SIL60-25-ER	25	390	180	70	434	900
SIL60-27-ER	27	435	200	80	511	850
SIL60-28-ER	28	470	200	80	552	850
SIL60-30-ER	30	540	220	80	638	850
SIL60-32-ER	32	620	250	90	731	850
SIL60-38-ER	38	890	420	100	1046	850
SIL60-40-ER	40	930	420	100	1164	800
SIL60-51-ER	51	1540	/	/	1924	800

SIL60 Standard GFRP Polyester Anchor Bolt Series.

Product Part No.	Diamete (mm)
SIL60-16	16
SIL60-18	18
SIL60-20	20
SIL60-22	22
SIL60-24	24
SIL60-25	25
SIL60-27	27
SIL60-28	28
SIL60-30	30
SIL60-32	32
SIL60-38	38
SIL60-40	40
SIL60-51	51

SIL61-SP High Performance GRP Polyester Reber SP Series.

Product Part No.	Diameter (mm)	Bolt Ultimate load (KN)	Cross section (mm)	Ultim st
SIL61-16-SP	16	186	177	1(
SIL61-18-SP	18	238	227	1(
SIL61-20-SP	20	298	234	1(
SIL61-22-SP	22	363	346	10
SIL61-24-SP	24	463	415	10
SIL61-25-SP	25	475	452	10
SIL61-28-SP	28	544	573	95
SIL61-30-SP	30	627	660	95
SIL61-32-SP	32	717	755	95
SIL61-34-SP	35	770	855	9(
SIL61-36-SP	36	866	962	9(
SIL61-38-SP	38	968	1075	9(
SIL61-40-SP	40	1016	1195	85
SIL61-45-SP	45	1292	1520	85
SIL61-50-SP	50	1603	1886	85
SIL61-54-SP	54	1765	2206	8





GFRP BAR



SIL60-ER GFRP **Anchor Bolt Series** (Epoxy Resin)





High Performance GFRP Polyester Reber SP Series.