





high performance concrete floors ~ a solution for every surface



Sales & Services queries: info@bgsb.in

### **Product Line & Services**



Jointless Concrete Floors



PP Fibre (High Tensile) Floors



Laser Levelled Concrete Floors



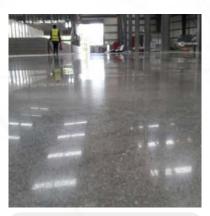
**Glass Fibre Floors** 



SFRC Floors



Super Flat Floors



Polished Concrete System



Floor Restoration System



Floor Hardening System



PQC Roads & Pavements



Post Tensioned Jointless slabs



**Stamped Pavements** 



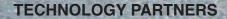


"At BGSB, we pride ourselves in offering the highest quality workmanship, minute attention to detail and impeccable customer service both on and off site."

Parmeet Bhalla ~ Group CEO & MD BGSB Concrete Solutions (P) Ltd BGSB Concrete Africa Ltd

**BGSB Group is** the most leading contractors for concrete floorings in India and Africa. BGSB offers high performance industrial and warehouse Concrete floors, Densified floors, high tolerance Super Flat floors for VNA type tall warehouses. BGSB also specializes in PQC Roads, Pervious concrete pavements, Stamped concrete, MicroTopping floors and many other options.

BGSB's standard business practice includes, organizing technical training workshops to enhance the skills of our workers. BGSB management is highly engaged in attending the International events across the globe, which ensures that BGSB provides best in class products & design services to our clients, at par with International standards. BGSB also ensures all floor treatments and applications are VOC free and environment friendly, in line with compliance norms of National & International Green Building Organisations. BGSB has empanelled top international consultants to cater the needs and requirements of critical floor designs and offers design-build solutions with up to 10 years performance warranty options.







MARSHALLTOWN



### Laser Levelled Concrete Floors Floors



Flatness and Durability are the fundamental performance requirements for flooring and an important consideration in terms of construction aspect. The emergence of e-commerce industry & introduction of high rise forklift trucks means, it requires greater attention to the flat flooring system specifications, their achievements and measurements are essential. Concrete flooring undoubtedly gives a wide scope of ideas and innovations to venture into. Concrete floors, due to its inherited properties is durable, tough, sturdy and resistant to heavy loads. We at BGSB, specialize in design-build flooring solutions for Industrial shop floors or warehouses as per the tolerances prescribed in Indian IS standards & International standards including as per TR-34 UK Concrete Society, German DIN standard or ASTM American standard.In its fleet, BGSB possesses, Ligchine MAX & SS-II, laser Guided - Boom type Machine: MAX & SS-II machines are made by Ligchine USA,

which offers automatic laser control mechanism, which ensures accuracy as per the highest prescribed tolerances with the use of electronic and remote controlled hydraulics. Unlike the conventional walk behind models, the Ligchine screed machines comes with telescopic boom extension arm which does not requires the machine to go inside the concrete, ensuring the best in class flatness results. This technology helps to achieve high tolerances as per TR34 UK standards and other international flooring norms. MAX has capabilities of delivering up to 2,000 Sqm within a single panel size.

Floor Class	Floor Classification for Free Movement Typical Floor Use	Property E	Property F
FM1	Where every high standards of flatness and levelness are required.Reach trucks operating at above 13m without side-shift.	4.5	1.8
FM2	Reach trucks operating at 8 to 13m without side-shift	6.5	2.0
FM3	Retail floors to take directly applied finishes Retail trucks operating at up to 8m without side-shift Retail trucks operating at up to 13m with side-shift	8.0	2.2
FM4	Retail floors to take applied screeds. Workshops and manufacturing facilities where MHE lift heights are restricted to 4m.	10.0	2.4



### **Jointless Concrete Floors**

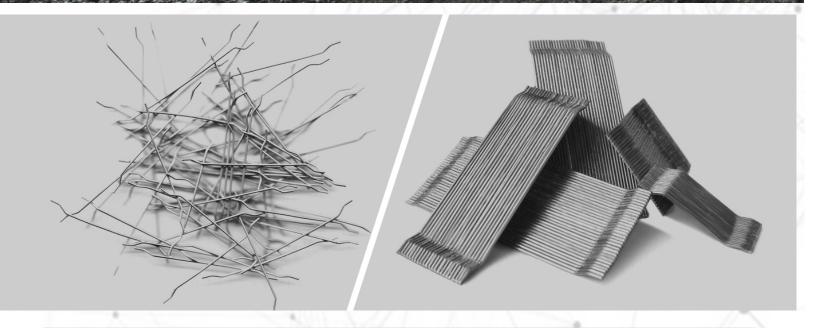
Jointless Concrete Floors can be designed and casted using several kinds of reinforcing fibers including Steel Fiber (SFRC), high grade PP Fibre (micro & macro) or Glass Fibre (micro or macro). These fibres have high tensile thin strings, having appropriately calculated aspect ratio (length to diameter) to reinforce the concrete for

tensile thin strings, having appropriately calculated aspect ratio (length to diameter) to reinforce the concrete for placing the ground floor slabs as per the load requirements of the project. BGSB certifies the use of appropriate fibre type for Jointless Floors as a result of its research over the years. The fibers help in improving flexural strength of concrete, which further improves crack resistance abilities of slab and impact resistance properties of concrete. The fibers comes in different shapes, sizes and forms (glued, non glued, 3D or 4D) differing from manufacturer to manufacturer and BGSB recommends only the best and has a strict multi-point criteria to choose the right product by the approved manufacturer after assessing the project requirement.

Jointless floors can also be designed using steel re-bar, depending upon the load and performance requirement and is called a 'Hybrid Design'. The correct calculation of design elements can also help in reducing the cost of construction by a substantial percentage. The important part of designing Jointless Floors is to maintain aspect ratio of field size, giving special attention to the floor span and day joints. BGSB recommends the use of high performance steel Armour Joints for best load transfer between panels and to avoid curling along the construction joints.

The thickness range of our Jointless floors starts from 125MM, which allows a great amount of savings against conventional floor designs. BGSB Group has placed millions of square meters of concrete floor, including Jointless Floors, using steel fiber (SFRC), PP Fibre, Glass Fibre and conventional steel re-bar system, across India and Africa.

# **Steel Fiber - SFRC Floors**



Steel Fiber Reinforced Concrete (SFRC) is a concrete mixed with thin but high tensile steel wires drawn in a specific shape, having appropriately calculated aspect ratio (length to diameter) to reinforce the concrete for placing the ground floor slabs or even structural slabs, using appropriately calculated Steel Fiber dosage in line with the load requirements of the project. BGSB certifies that SFRC Flooring helps in improving crack resistance and impact resistance properties of concrete. SFRC Flooring can be used with or without steel re-bar depending upon the load and performance requirement. If calculated right, it does helps in reducing the cost of construction by a certain percentage. Steel Fiber comes in different shape, sizes and forms (glued or non glued) differing from manufacturer to manufacturer and BGSB only recommends the best and has a strict multi point check criteria to choose the right product from the pre approved list of manufacturers. Having laid millions of square meters using Steel Fiber (SFRC) and conventional Steel re-bar floors across India and Africa, BGSB claims to be a undisputed market leader in the industry of concrete flooring.

Industrial floors are inevitably subjected to various types of loading. There will be heavy rack posts, material handling equipment like forklifts, stacked loads, heavy tanks and other processing machines. Thus, in these floors, strength and toughness are of paramount importance. The traditional norm in industries is to provide a concrete grade slab with reinforcement in the upper layer to cater to shrinkage and crack-control, leaving the lower slab uncovered, creating the need of reinforcement at the bottom of the slab, which can easily be compensated using steel fibers.



### **Fiber Reinforcement Options**

### **Glass Fiber**

**Glass fibers** have an affinity for cementitious composites, high tensile strength and modulus of elasticity, are an ideal reinforcement for concrete, and are efficient at very early stages of the cracking process. Moreover, glass fiber density is similar to concrete, which allows a quick dispersion for very short mixing times, with minimum clumping risk and exceptionally low influence on workability. There are typically two major kinds of Glass Fibers:

• **Micro fibers** control cracking processes that can take place during the entire life-span of concrete. From cracks due to volume changes in fresh (settlement and plastic shrinkage) and hardened states (thermal and drying shrinkage), to post-crack load-bearing capacity contribution, micro fibers take care of everything.

• **Macro Fibers** provide a higher peak strength than plain concrete, due to the total bond between fiber and matrix, which allows the contribution of the fiber action even before the peak load, at the very beginning of the microcracking process. Subsequently, it provides residual strength over a large range of crack openings.



BGSB offers structural software support to design glass fiber reinforced concrete floors. Our design input program collects all necessary project details, and processes them through a finite element analysis plus non-linear fracture mechanics database. The final design report includes the fiber content versus ultimate load relationship for different slab thicknesses, and their corresponding project requirements.



### PP Fiber

BGSB uses pure polyolefine based high grade PP Fiber. This ensures absolute alkali resistance, not only on the surface but everywhere else too. The fiber material is chemically neutral (inert) and rot-proof, and its water absorption rate is virtually 0%.

• **High Flexure Strength**; The addition of High Grade PP Fiber increases the flexural strength appreciably up to 28%.

• Anti Shrinkage; Investigations have shown that fiber concrete using High Grade PP Fiber reduces shrinkage cracking by 85% compared to conventional concrete, which corresponds to quality class FS2. This means that PP fiber concrete has a higher concrete density with minimum microcracks and that an earlier utilization of building structures can be expected.

• Water Resistant; High Grade PP fiber reduces the water penetration depth in the concrete body. The investigation shows that the water penetration depth is reduced by over 25% after adding the fiber.

• Fire Resistant; In the event of fire, due to the rapidly rising temperatures, such high stresses arise that it is not possible for conventional concrete to withstand this vapor pressure.

Using a higher dosage of High Grade PP Fiber gives concrete higher permeability. In the event of a fire, the melting point of approx. 160°C will cause the fibers to melt. The result is that a capillary network in the concrete and the water vapor that is produced, can escape.



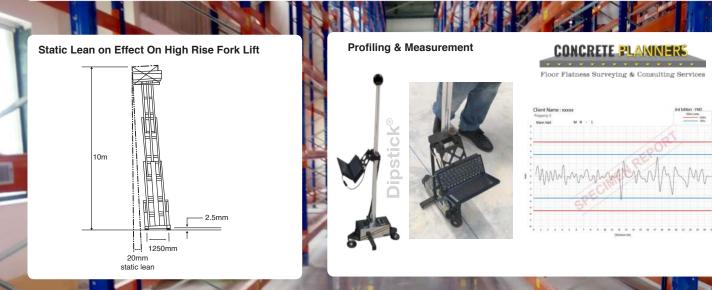
BGSB offers highly skilled team to design and cast "Superflat Concrete floors" as per the tolerances prescribed by International flooring standards as follows;

- Concrete Society UK, TR-34 DM-1, 2 & 3 ~ FM-1, 2 & 3
- DIN 15 185 and 18202

ASTM 1155

#### Why super flat floors?

"Floor flatness is the fundamental performance requirement in floors and an important consideration in terms of construction". The introduction of highrise forklift trucks means and requires greater attention to the flat flooring system specifications, their achievements and measurements are essential.



#### Floor Classification for Defined Movement

-	1		1	A Carlotter	The second second	Jak La	
1	Floor Classification	MHE Lift Height	Property Z slope mm/m	Property dZ Z x Z	Property d <sup>2</sup> Z dz x 0.75	Property dX 2 x Z slope x 1.1	Property d <sup>2</sup> X Fixed Value
	DM1	over 13m	1.3	Z x 1.3	Z x 1.0	2.9	1.5
1	DM2	8 to 13m	2.0	Z x 2.0	Z x 1.5	4.4	2.0
1	DM3	up to 8m	2.5	Z x 2.5	Z x 1.9	5.5	2.5

BGSB is the most leading & experienced company, with highest number of Superflat floors laid & delivered to the warehousing industry worldwide. Super flat concrete floors are considered to be the most skillful job in flooring industry as it needs sharp precision in controlling micro levels which also includes selection of high & special quality concrete. BGSB's in-house mix design team is expert in developing the concrete mix, which makes the floor resistant to the shrinkage cracking, dusting and other defects which may affect the MHE performance in a warehouse, leading to production loss. BGSB always believes in educating their clients by sharing information and knowledge on how to achieve the highest quality floor, which otherwise is not shared by other contractors. When choosing BGSB, rest assured as you have selected the best.

### **Colored Concrete Toppings**

BGSB has an innovative approach towards concrete as a material and even specializes in casting colored concrete floorings for heavy duty, industrial and warehousing floors. It includes integrally selective color options, acid staining and even colored hardener toppings using slurry top method. It is a value added service which improves aesthetics of the floor without compromising on the durability and structural strength of the concrete slab. Though grey color is a popular choice for concrete floors, especially for factories and warehouses but various other color options can also be looked at whilst choosing from the pallet.

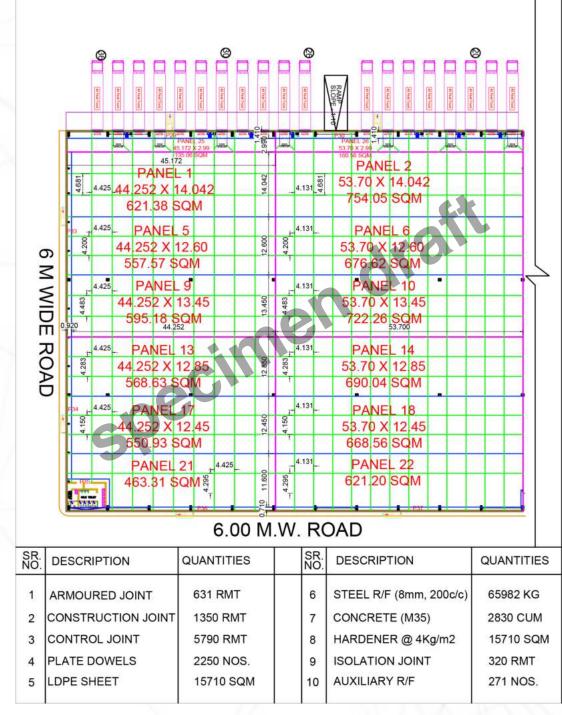
Colors can be swirled together to create a mottled effect or kept separate with a distinct pattern. Colored dry shake Hardeners are the most tried-and-true method of coloring concrete floors and are prized for their permanence and unique color statement. Moreover on the other hand acid stains penetrate and react chemically with the concrete slab making the floor look unique and distinct.

Colored concrete demands far more than just adding the pigments. From planning to installation, essential decisions must be made for the application to succeed and the most diverse production steps must be checked and executed expertly. Write us at info@bgsb.in to get more technical information on the colored toppings.





## Pour Plan Layout

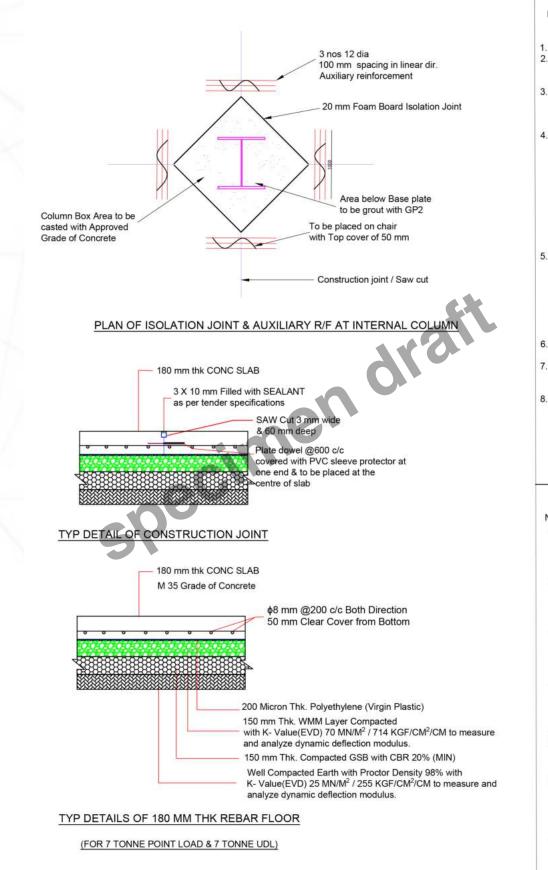


ARMOURED JOINT CONST. JOINT CONTROL JOINT P 43 NOS TOTAL PANEL NOTES: Panel number mention is 1. only to identify the working panel. 2 Pouring sequence should be as per work front availability & must be consider alternate panel to pour. Saw cut should be done 3 within 24-48 hrs of casting Isolation joint as per 4. section drawing. 15.04.2019 First Draft DWG TITLE:-FLOORING POUR PANEL DETAIL CLIENT :-XYZ PROJECT :-XYZ SAP BP NO:- XYZ WO REF:-XYZ DRAWN BY: APPROVED BY: BHAVNA BGSB BGSB CONCRETE SOLUTION PVT LTD 9F.MOULSARI AVENUE, DLF PHASE-3 GURGAON, HARYANA - 122002 +91-124-4084200 www.bgsb.in REVISION No : First Draft DATE : 15.04.2019

BGSB specialises in design-build solution for high performance floors and the experts at BGSB create a pouring sequence according to which the floor is divided into panel grids that gives an outline of the step-by-step work flow and the time taken to complete the floor. These professional drawings also ensures that the quantity of all items are absolutely accurate in accordance with tender and BoQ.

Pour planning and design establish the designing of the structural section in a systematic and time bound manner in accordance with the loading and design requirements. This serves as a blueprint that gives the workforce and the client the exact picture of the project from inception to execution ensuring complete transparency.

### Floor Section Drawings



#### Notes:

- Grade of Concrete M35.
  Clear cover to Auxiliary reinforcement minimum
- 50 mm from Top. 180 mm thk. Rebar Floor Slab designed to carry the 7 Tonne Point load and and 7 Tonne UD
- and 7 Tonne UDL. All slabs laid on 150 mm WMM on 150 mm GSB with modulus of Sub-grade reaction (K- value/ EVD) as 70MN/M<sup>2</sup> / 714 KGF/CM<sup>2</sup>/CM to measure and analyze dynamic deflection modulus(Test to be conducted using Real time GPS enabled equipment). Modulus of Sub-grade reaction to be confirmed by plate bearing tests at the rate of 1 per 1000 m<sup>2</sup>.
- GSB/WMM to be laid on well compacted Earth with Proctor Density 98% and K-Value (EVD) as 25 MN/M<sup>2</sup> / 255 KGF/CM<sup>2</sup>/CM to measure and analyze dynamic deflection modulus (Test to be conducted using Real time GPS enabled equipment).
- WMM Top surface tolerance = +0/-15mm.
- Concrete strength M35 as per Concrete Mix design guidelines which is submitted separately.
- Armoured Construction Joints full depth (Ideal Joint- Classic) to be used

For 180mm Thk. Slab (Model IJS 150)

#### NOT TO SCALE

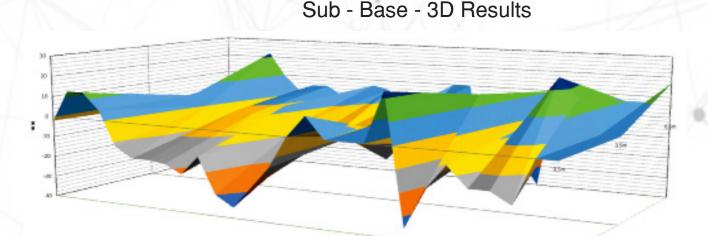
02.04.19	First Draft
DRG. TITLE :	
TYP. SECTION	DETAILS
CLIENT:	
XYZ	
PROJECT:	
XYZ	
DRAWN BY: BHAVNA	APPROVED BY:
BGSB	
BGSB	

### Supervision & Sub-base Certifications

### Sub Base Elevations & Topo Maps

BGSB practices planning and executing grading operations so that the final soil / sub base elevation is at the theoretical bottom of the slab on ground immediately before commencing concrete operations. Sub-base has three main purposes:

- 1. It's a working platform for floor construction activity.
- 2. It provides level formation for the construction of concrete floor slab.
- 3. It transmits the load from concrete slab to the sub grade.

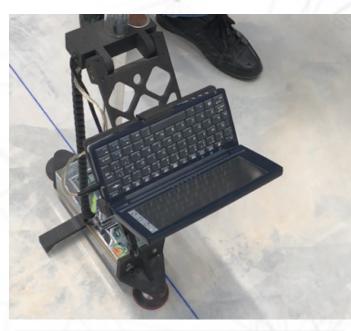






BGSB uses TERRATEST® LWD type machine, which is the easy and fast way to check quality of soil / GSB / WMM / WBM compaction at construction sites. BGSB's sub base expert team performs the test and no load vehicle is needed. TERRATEST gauges are fully equipped with GPS system, printer which allows the operator to release the results instantly. BGSB testing equipment combines the best of both worlds: absolute high quality equipment made in Germany and BGSB's in-house experts conducting the test, live at site.

### Floor Surface Certifications



#### **Surface Hardening Abrasion Resistance Testing**

Abrasion resistance is an important performance requirement in warehouse and industrial floors. Floors can be exposed to quite aggressive actions from trucks and other equipment.

#### Procedure:

- To carry out abrasion test, 8 test locations are marked on the floor using a machined template.
- Readings are taken at each of the 8 test locations using a digital depth gauge.
- The accelerated abrasion resistance testing machine is bolted into place through pre-drilled fixing holes.
- The machine with its 3 steel hardened wheels and a combined weight of 65kg then rotates 2850 revolutions plus or minus 10.
- After the test the machine is removed and the digital depth readings are taken at each of the 8 test locations again.

Result: The difference between the average two sets of readings gives a measure of the Floors Abrasion Resistance.



#### **Flatness Certification**

Floor Profiling, Compliance Reports & more..

BGSB in association with highly experienced third party agencies, offers floor profiling services using the Dipstick® Profiler, by far the most accurate and specific concrete floor and pavement profiler in the world – used in over 65 countries without needing calibration.

Our special floor report covers far more than flatness/levelness • "F Numbers" i.e. FF and FL as per ASTM E1155

- Fmin, the profiler that measures Fmin for defined traffic floors
- TR-34 Free Movement (FM); TR-34 Defined Movement (DM)
- Gap under Sliding Unleveled Straightedge
- DIN 15185
- DIN 18202

• Joint Profiles; Joint Movement under Load; Thickness of Toppings, Fills and Coatings; Construction Forms; International Roughness Index (IRI); ASTM E1926-08; AASHTO R 41; Rut Depth; Slab Upheaval, etc.



#### **Floor Gloss Certification**

The floor is considered to be the heart of an industrial building and it is rightly said that the first impression is the last impression.

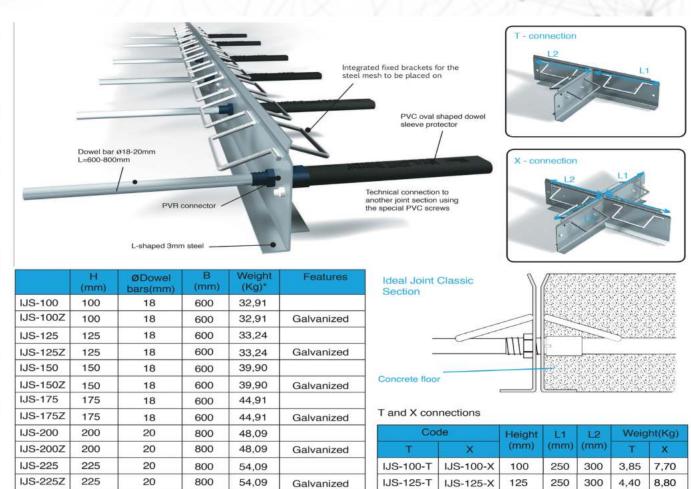
A glossy finish will give your floor not just a shiny look but also provide immense durability that would reduce the need for constant maintenance and will reduce lighting requirements.

Due to a lack of technical certification, a floor's gloss level was always a bone of contention. Thanks to the gloss-o-meter, that shine is now measurable. At BGSB, we help our customer decide in advance the desired level of gloss. This specification is documented in the tender and the result is delivered according to the tender guidelines.

BGSB has top-of-the-line gloss meters that are smart, sturdy and stable for gloss certification requirements.

# Ideal Joint System Steel Armour Joint for concrete floors

#### ARMOUR JOINTS for Expansion & Construction Joints



=3000mm (Length of a single joint)

250

250

IJS-250

IJS-250Z

R=500mm (Distance between dowel bars) S=32mm (Maximum lateral movemen allowed)

20

20

Technical drawings in AutoCAD or JPG format can be downloaded directly from our website; www.idealwork.com

60,12

60,12

800

800

Ideal joint system joints can be made on request with customised measurements decided by the works management "Weight of the assembled joint, dowel bars included

150

175

250

250

300

300

5,00

5,55

10,00

11,10

IJS-150-X

IJS-175-X

BGSB now offers the solution for the best performing construction joints that addresses most of the concerns faced by the construction industry in terms of concrete floor performance. IDEAL JOINT SYSTEM® has been carefully designed and developed to offer engineers, specifiers and contractors, the most innovative construction joint system in the flooring industry today. The IDEAL JOINT SYSTEM® will distribute load transfer evenly allowing horizontal and lateral movement between each independent section of the slab-on-grade providing seamless approach to the entire area.

Galvanized

IJS-150-T

IJS-175-T

Detail of Ideal Joint System® installed and ready for the concrete placement.

Detail of Ideal Joint System® ready for the next placement of concrete.



### Conecto Joint System Steel Armour Joint for concrete floors

Conecto Joint system are designed to create expansion joints for industrial. Steel armoured joints with their unique construction constitute a stay-in-place formwork and additionally secure concrete floor edges. Conecto Dowel system is a floor expansion joint solution, where an anchoring element is a steel dowel placed in a specifically designed plastic sleeve, which permits free horizontal movement (along and across of expansion joints) and prevents vertical movements between expanded floor plates. Plastic elements are provided with proper reinforcements, which protect them against the deformation caused by the concrete pressure (even when the floor is thick).

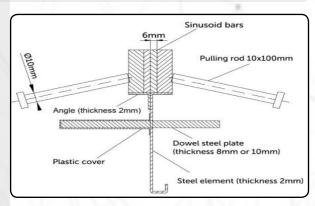




Conecto Sinus joint is innovation solution on the market. Due to unique construction and best quality materials it gives feeling when driving over it, that there is no profile in the floor. Using sinusoid joint you could avoid floor cracking and difficult and expensive reparations. Conecto sinus joints completely adsorb shocks and they are completely invisibly in usage. Usage of Conecto Sinus joints minimizes operation costs. They reduce problem of damaged fork-lift wheels, loading equipment and goods destruction due to shocks.

Expansion strips are mounted in concrete floor plates to compensate movements in plate sections. Concrete plates are exposed to internal and external pressures. Damage occurs mainly at the edges of plates near to connections. Connection of floor plates should compensate their mutual horizontal movements (perpendicular and parallel to the expansion joint) which are usually caused by thermal expansion and shrinkage of concrete. At the same time the connection must also block vertical movements and mutual curving of floor elements which is a consequence of traffic, heavy loads and uneven passive earth pressure.

Conecto is a renowned name in the spectrum of expansion joints. Modern construction has to be adept at accommodating to the growing population of our planet. The development of the latest buildings of large dimensions uses expansion joints to cover structural slits. The deterioration in the ground quality on the construction site also determines the need to use expansion joints.





### **Polished Concrete System**

BGSB offers the "Prep To Polish" signature Concrete Polishing & hardening system, developed by Substrate Technology Inc. (USA) and is now available in India, which is best suited for Industrial Units, Retail outlets and warehousing facilities with outstanding warranty of 10 years. BGSB's unique Polished Concrete System eliminates the need of continuously replacing the floor coverings thus making it value for money proposition. The Polished concrete flooring is also becoming the preferred choice of the ones looking for ultimate NO WAX / EPOXY flooring options. Concrete floors may wear out due to multiple reasons like surface abrasion, de-lamination, etc. in the due course of its use, but regardless of age, the concrete surface can be polished using our signature process.

Hubtex

dea

innovative surfaces

#### Procedure details:

Moreover, no special acid agents are required in order to prepare the surface and the initial preparation consists of 5 steps of surface grinding. This is done in order to achieve a dense level as top surface of concrete is often found to be damaged by pot holes, dusting, is softporous. Polishing with resin diamond pads up to 3000 grit level subsequently follows this procedure. Additionally, based on specific requirements, Lithium silicate based Nano liquid floor hardeners and penetrating surface densifiers are also used for arriving at the right sheen and highly increased surface abrasion resistance. As per the International studies the top surface abrasion resistance is increased by at least 5 times after the application of Polished Concrete System.

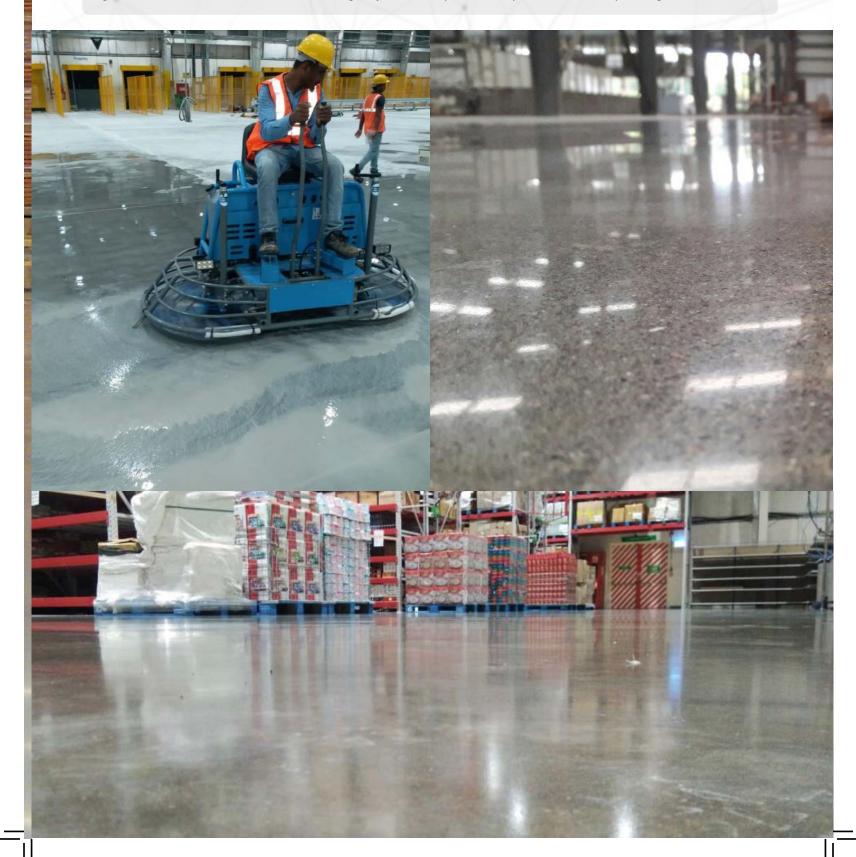




### Floor Hardening System

BGSB's unique floor / surface hardening system has a supremely high productivity rate while ensuring the best shines and polish. BGSB uses ride on type trowel machines, which are 80% faster than the traditional concrete floor polishing equipment. The use of trowel polishing system for grinding, polishing & densification is gaining more popularity, partly because to the challenge of a tight labor market. But a shorter and quicker timeline and the resulting cost savings are the major factors.

Trowel based hardening system has a wide spectrum of usage that is apt for both new and old industrial floors with large square footage where traditional grinding and polishing is not a good option due to timeframe, budget or other constraints. The system and chemicals used by BGSB ensures surface hardness increase by at least 150%. Trowel Polishing machine enhances your flooring to give the desired concrete finish, from matte to glossy, at a faster pace as compared to traditional polishing.



### **PQC Roads & Pavements**



**PQC** stands for Pavement Quality Concrete (**PQC**) Grade of **PQC** is Generally M40 and it is designed as per IRC:15-2002. **PQC** is used for the construction of Concrete **roads** as a top wearing layer. The thickness range generally starts from 180mm up to 300 mm. BGSB specialises in design mix of PQC concrete, which is quite different from a general M40 mix. PQC Roads are laid using Automatic Truss Screed machine as it offers automatic hydraulic controlled movement system which ensures most consistent screed finish of concrete. It has an in-built vibrator within the screed board, which ensures consistent compactness and vibration throughout the casted slab. The width of panel can be up to 50 feet using multiple extension modules. Most interestingly, this machine can be put to use where the required tolerance is "**very flat**" as per regulated flooring standards.



# **Restoration of Failed Floors**

BGSB's signature restoration system can be opted for repairs of all industrial and warehouse floorings, a few listed below:

- 1. Shrinkage & settlement cracks
- 2. Colour fading of Acid stained floors
- 3. Discoloured patches
- 4. Dusting of surface
- 5. Curled joints
- 6. Exposed expansion joints

Regardless of the damage caused on the floor, BGSB offers the most innovative solutions to restore the floor surfaces. Few listed below:

- 1. Polished Concrete system
- 2. Selflevel toppings
- 3. Micro concrete toppings
- Cutting & casting of damaged area
  Crack Repair System (CRS)



Floor Restoration in progress

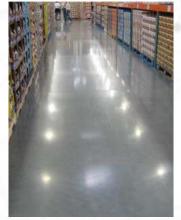
**Before Restoration** 



After Restoration

# Milestones of Craftsmanship















































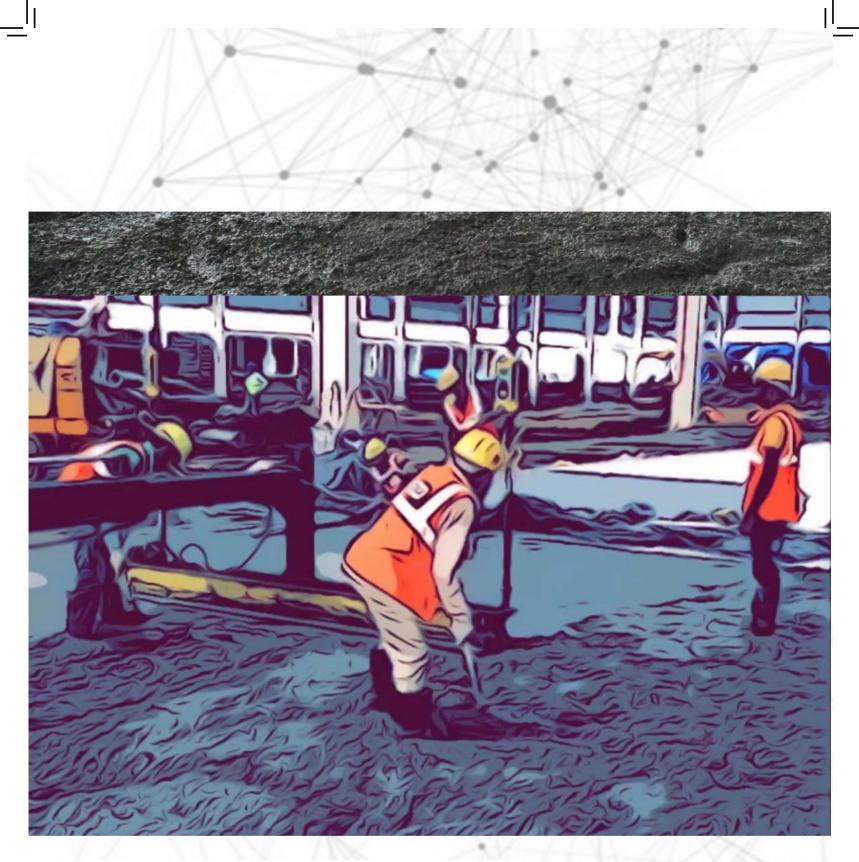
### **Excellence Beyond Boundaries**



# BGSB



Sales & Services queries: info@bgsb.in



### **BGSB Concrete Solutions (P) Ltd**

CORPORATE OFFICE

9F, Moulsari Avenue, DLF Phase-3, Gurugram 122002 Haryana, India www.bgsb.in info@bgsb.in +91 9599991020 +91-124-4084200

#### **BGSB Concrete Africa Ltd**

REGIONAL AFRICA OFFICE

Red Cross Road P.O. Box 40683 Nairobi 00100, Kenya www.bgsbafrica.com info@bgsbafrica.in +254-788994025

