



# FLOORING

# ABOUT US

We take this opportunity to introduce ourselves as a Building and General civil Construction Company.

We are the name behind several of Nairobi and its outskirts most advanced and prestigious facilities.

Founded by the directors, the late Mr. Dhirajlal M. Ajmera and Mr. Manish D. Ajmera, in 1988, we have been providing our clients with reliable solutions to their most complex challenges, with over 20 years experience in Civil Engineering.

Our expertise spans the construction industry spectrum, from smaller renovations to multi-million shilling project.

Our success is driven by more than building some of the most advanced facilities for our corporate clients.

More and more of our clients are turning to us for our distinctive ability to implement innovative project management techniques and to serve as a reliable provider of knowledge driven solutions for their complex construction projects.

Our team of construction professionals offer a single source solution for all of your construction related needs. whether it is restoration, site preparation, a new facility or facilitate renovations, we have the experience and personnel and equipment to provide the highest quality construction on schedule and within budget.

We support our clients from project inception, to the commissioning of the fully operational facility.

Thanks in advance,

Yours faithfully.

## OUR MISSION

Mandhir Construction Ltd, is dedicated to provide our customers the highest level of quality construction services at fair and market competitive prices. To ensure the longevity of our Company through repeat and referral business achieved by customer satisfaction in all areas including timeliness, attention to detail and service minded attitudes. To maintain the highest levels of professionalism, integrity, honesty and fairness in our relationships with our suppliers, subcontractors, professional associates and customers.

## OUR VISION

To be recognized for being Nairobi's best construction company, delivering every project to the highest standard, with passion and professionalism. To achieve 'bringing dreams to life' with our clients and all involved, while ensuring enjoyment is gained throughout the construction journey.



# OUR SERVICES

## Serving for excellent concrete solutions:

- » High-strength Concrete » High-performance Concrete » Ultra High-performance Concrete » Coloured Concrete
- » Micro-reinforced Ultra High-performance Concrete » Self-consolidating Concrete » Shotcrete
- » Limecrete » Pervious Concrete » CLC Concrete » Steel Fiber Reinforced Concrete » Polished Concrete

## FM2/FM3 LEVEL VNA AND WAREHOUSE FLOORS

Due to Optimum design techniques, Durafloor has been able to develop construction techniques that meet the highest surface regularity requirements. Earlier, these were traditionally constructed using slow and laborious long strip methods.

High Tolerance Warehouse Floors and VNA Floors for defined and Non-Defined movement are executed with expertise by Durafloor Concrete Solutions.



## FLOOR FLATNESS AND LEVELNESS

Flatness is how close to geometric planarity a slab approaches. the profile of a slab consists of concrete waves. these waves have amplitude and wavelengths. FF is a statistical measure of roughness of a slab's surface caused by presence of waves.

FL Levelness is the amount of slope (or pitch or tilt) in a slab. this is the degree to which the surface of the slab approaches true horizontal perfection.

FF Floor Flatness - variation from surface plane  
(bumpness)

FL Floor Levelness - variation from horizontal  
plane (pitch)



# Joints and Load Transfer: Key to Floor Durability

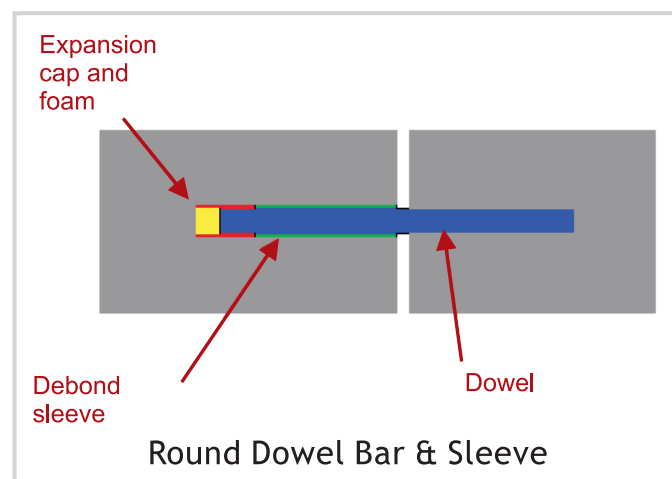
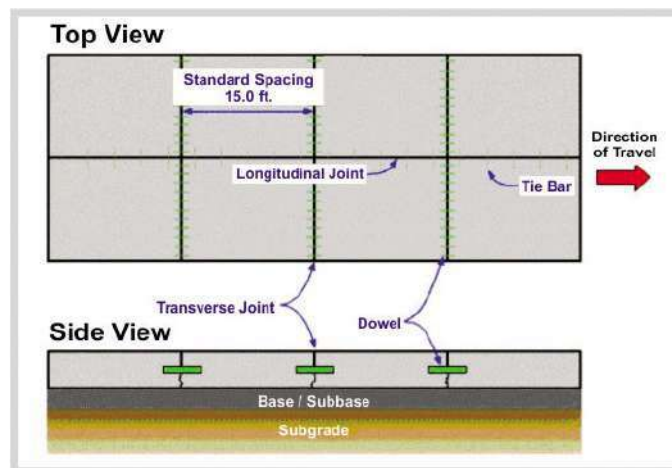
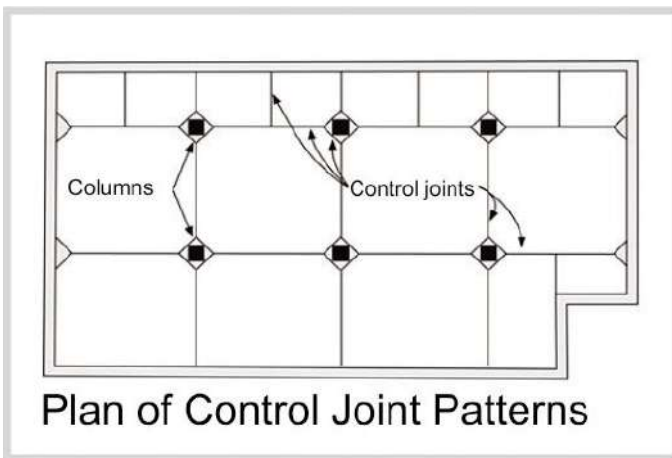
The function of an industrial floor is to serve as a work platform, supporting the movement of material handling vehicles carrying raw materials or merchandise. Floors that are smooth and interruption - free allow optimum movement and productivity. Joints serve several functions within floors: they are the ends of pours; they induce shrinkage cracks to follow straight lines; they allow for seasonal slab expansion / contraction; and they provide the linkage between smaller slab segments. To accommodate all these functions, joint design must incorporate the four following principles:

🔧 Narrowness

🔧 Plumbness

🔧 Load Transfer

🔧 Protectability



# High Performance Flooring Solutions.

## Super Flat Floors

Turnkey solutions which include design of grade slab, detailing, concrete design, installation, QA & QC, surface regularity check to meet the requirements of Concrete Society Tr34 od DM classification for VNA Floors.



## Heavy Duty High Performance Flooring Solutions

Customized High Performance flooring solutions for various loading, Design built for axle load from 2 tones to 20 tones, resistant to high ware and tear, virtual crack free flooring, production areas, parking decks, ramps & rigid pavements.



## Abrasion Resistant

It is a dry shake cementitious used for hardening surfaces. It is used on fresh laid concrete surfaces.



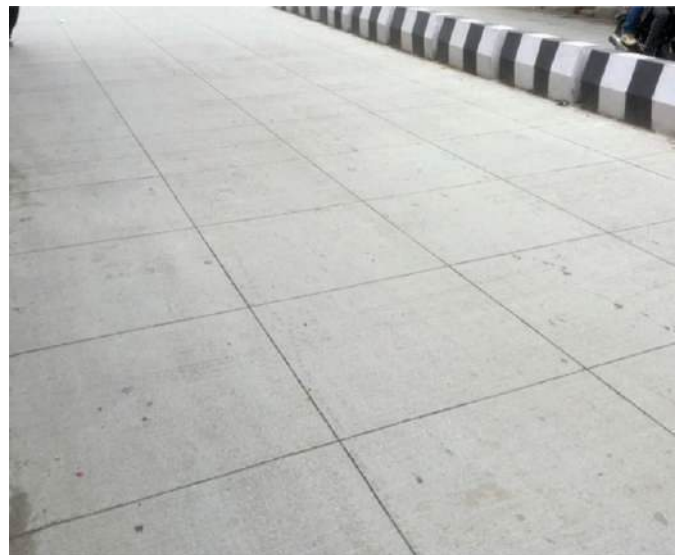
### **Densifier & Dust proofing surface**

The liquid is used as a Densifier. It is spread on fresh concrete surfaces which help in dust proofing the surface. It is used where the concrete surfaces are to be hardened.



### **Ultra thin White-Topping (UTW)**

UTW is rehabilitation / strengthening method for damaged, rutted flexible (asphalt concrete ) pavement. It is High Performance Concrete overlay of 50 to 100mm over asphalt pavement. This provides long term performance and increased capacity.



### **Self Leveling Cementitious Thin Section Flooring**

Self Leveling Cementitious floor resurfacing system, highly suitable as underlayment / over layment for light industrial traffic. It can be applied manually using specified tools or by pump to reduce a self smoothing, fast-setting, flat and economical substrate prior to the application.





### **Thin section Heavy Duty Floor Resurfacer**

High strength thin section over layment / floor refurbishment cementitious flooring system can be laid from 12mm upto 50mm thickness.



### **Existing Floor Patching and Strengthening System**

Thin cementitious floor patching system for cavity sealing in concrete floors, being high early strength floor patching system, treated floor can be released for traffic within 24 hours.



### **High Gloss, Densified And Dust Proof Treatment To Concrete**

It gives chemically reactive, high gloss, durable concrete profile, suitable for old & new concrete alike. It significantly improves durability, aesthetics and dust proofing qualities of concrete.



### **Laser Screed Flooring**

Flooring with Laser Screed machine  
COPPERHEAD XD 3.0 SOMERO S840  
Large pours with 500-1000sq mtr per day  
area can be covered very efficiently.



### **Joint Repair System**

Repair of damaged construction joints and  
expansion joints with Armoured joints.  
Enables strength to section, protects  
edges over vehicular movements and  
ensure durability throughout life span of  
floors.



### **Shrinkage Compensated Concrete**

Concrete with SCC additive to give volume  
stable, shrinkage compensated concrete  
and almost crack free concrete.  
Also minimizes surface level variation  
after cure and better finishability.

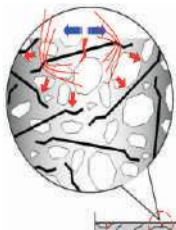
## Stamp Concrete

Process involve polishing floor with metal & diamond bonded tools with difference hardening and followed by resin bonded diamond tools for polishing to achieve glittering finish with regular concrete like salt & pepper finish as well as different colouring of concrete is possible with super polished finishing



# 360° Reinforcement for Concrete Flooring

## Duraflex™ Steel Fibres bridging the crack



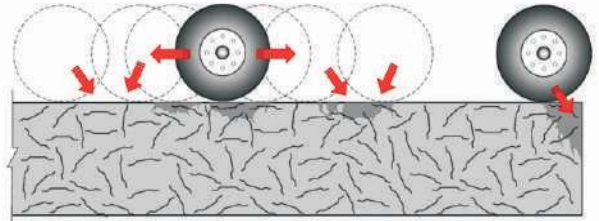
- ▷ Duraflex™ Steel Fibres **carry and distribute** the stresses to control the cracking development
- ▷ The Fibres take **shrinkage** stresses, due to **thermal variations** and control the **crack widths**.



Duraflex™ SFRC Slab on Grade

## Duraflex™ Steel Fibres reinforce the concrete in every direction - Thus 360° Reinforcement

- ▷ Enhance impact and abrasion resistance
- ▷ Prevent edge and surface failure
- ▷ Improve fatigue resistance



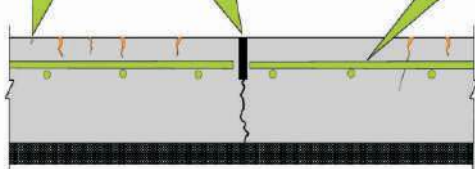
From brittle into a ductile material

## Shrinkage Crack Control

Shrinkage crack always start with micro crack.

Saw Cut Joint Control crack line (12-24 hrs after casting)

Min. Steel Area  $A_s = 0.13\%$

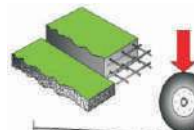


Conventionally Reinforced Concrete Slab on Ground

The steel fibers redistribute the stresses within the concrete, restraining the mechanism of formation and extension of cracks.



## Increase the flexural toughness / residual strength



Duraflex™ Steel Fibres Substitute Top/Bottom Reinforcement

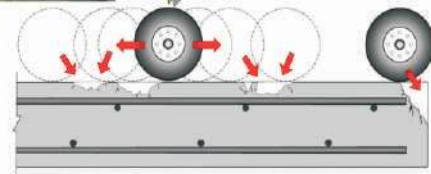


Conventional Top Reinforcement

## Improve Resistance and Ductility

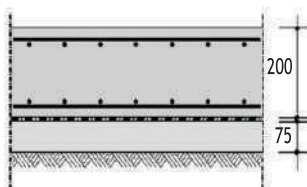


- Heavy Duty Load
- Impact
- Abrasion
- Fatigue load
- Dynamic load



Concrete is a brittle material

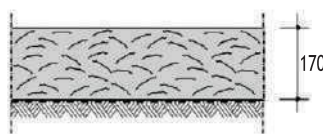
## Potential to reduce thickness with Duraflex™ FRC



### Conventional Solution

- ▷ 200 mm thk.
- ▷ 2 layers of wire mesh
- ▷ 200 mm concrete cover
- ▷ 75 mm lean concrete

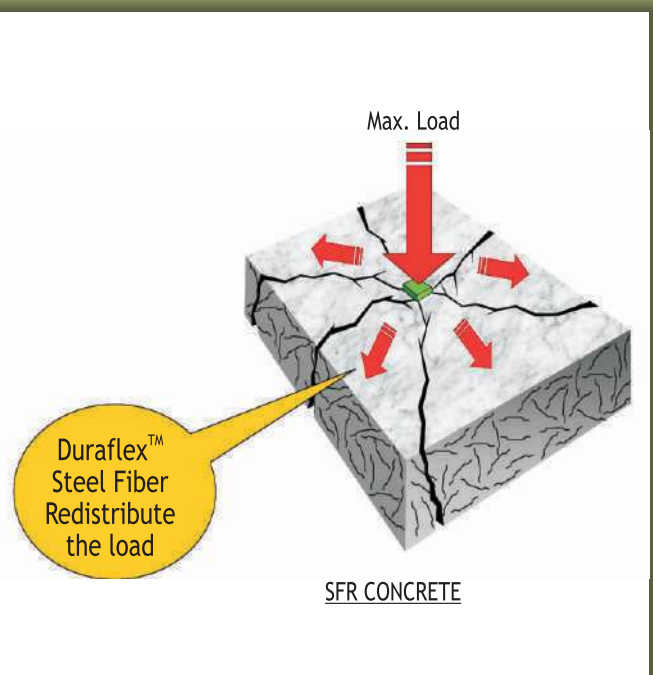
Same load bearing capacity - less costs !

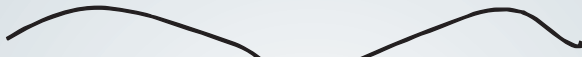


### SFRC

- ▷ 170 mm thk.
- ▷ 15/18/20 kg/m<sup>3</sup> Duraflex™ Ultra High Tensile steel fibers

Higher load bearing capacity / Increased energy absorption





Smooth, but not level (a typical result)



Relatively level, but not smooth

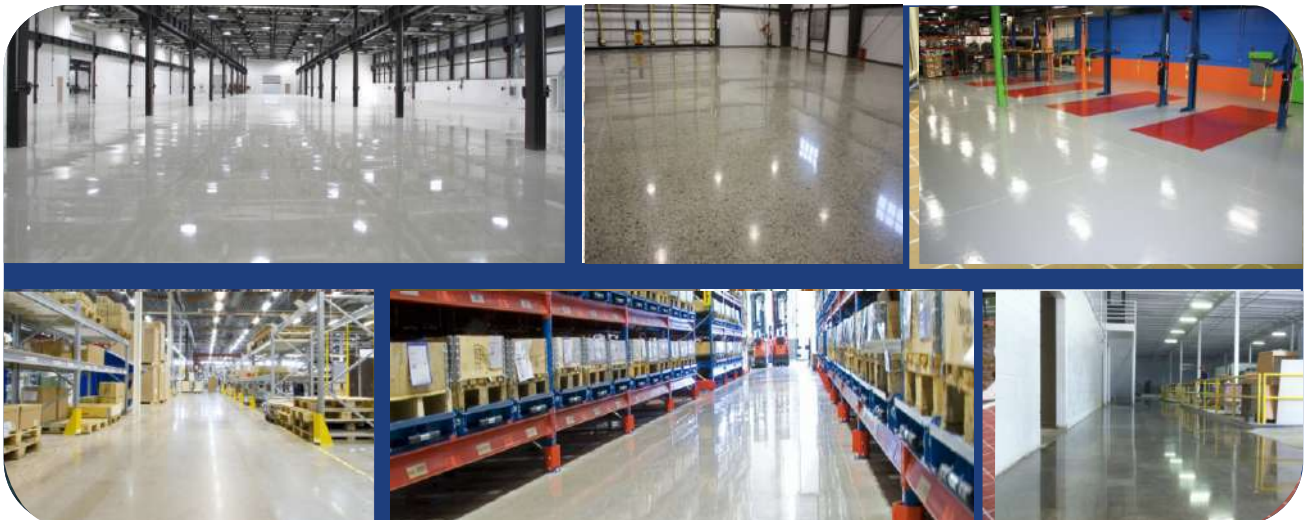


Level and smooth (the perfect result)



## DEFINITION OF SUPERFLAT FLOOR

| Floor Quality Classifications | MHE Lift Height | FF Value (Flatness) | FL Value (Levelness) | Tolerance in 3 Meter (*) |
|-------------------------------|-----------------|---------------------|----------------------|--------------------------|
| Ultra Flat                    |                 | $\geq 150$          | $\geq 100$           | $\leq 1.0\text{mm}$      |
| Superflat                     | Over 13M        | $\geq 100$          | $\geq 60$            | $\leq 1.6\text{mm}$      |
| Very Flat (Category 1)        | 8-13            | $\geq 50$           | $\geq 35$            | $\leq 3.0\text{mm}$      |
| Flat (Category 2)             | Below 8M        | $\geq 35$           | $\geq 25$            | $\leq 5.0\text{mm}$      |



**MANDHIR CONSTRUCTION LTD.**  
Civil and Building Constructors

# ALSO AVAILABLE FROM MANDHIR

Construction  
Specialist

Flooring  
solutions

Construction  
Consultants

## FOR MORE FLOORING AND COATING INFORMATION:

VISIT US

Mandhir is a specialty company with a leading position in the development and constructions and products for bonding, sealing, damping, reinforcing and protecting in the building sector and the motor vehicle industry. Mandhir 's product lines feature concrete admixtures, mortars, sealants and adhesives, structural strengthening systems, industrial flooring as well as roofing and waterproofing systems.

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