 LEVEL iTe F10
SELF-LEVELLING SCREED

DATA SHEETS

Contents

1. TECHNICAL DATA 2
2. MATERIAL SAFETY DATA 4
3. METHOD STATEMENT 9
4. THEORETICAL (VOC) CONTENT 16
5. SHORT REPORT VOC 17
6. VOC CONFIRMATION NOTICE 18
7. WARRANTY 19
8. INFORMATION SHEET 20
9. SUGGESTED SPECIFICATIONS 23
1. TECHNICAL DATA

1.1 DESCRIPTION

LEVELiT® F10 self-levelling screed smoothing compound developed for residential type applications that sets to 18MPa. It is a free flowing screeding compound that has been specifically formulated for smoothing rough or uneven sub-floors with a product prior to the installation of floor coverings. LEVELiT® F10 is suitable for use on cementitious screeds, power-floated concrete surfaces, hardened, well adhered old adhesive residues that have been ground to remove excess residue, and soundly adhered ceramic and similar surfaces. The applied compound can be walked on after 3 to 4 hours. Floor coverings – such as carpeting, vinyl tiles and sheeting, laminated and engineered wood – can typically be installed 24 hours after application.

LEVELiT® F10 can be applied in thicknesses from 0,3mm to 10mm in a single application.

Usage rate is 1,7Kg per m²per 1mm thickness.

Once cured LEVELiT® F10 is resistant to moisture and will not swell or soften when exposed to moisture.

1.2 SURFACE PREPARATION

NOTE: For internal use only due to the inability to control environmental factors such as wind or heat. It is recommended that direct to ground sub-floors be protected from rising damp to prevent dimensional changes in the floor covering (confirm the maximum permissible moisture content that the floor covering or adhesive can tolerate).

LEVELiT® F10 is resistant to rising moisture and should not swell or delaminate if exposed to reasonable moisture. Standard European practice has evolved that when vinyl flooring is to be installed, the substrate is to be sealed with a water based epoxy moisture barrier such as VAPORiT® +PLUS, or similar. The surface must be hard, sound, dry and free of dust, dirt and other materials such as grease, oil and paint.

1.3 PRIMING

BONDiT® primer and bonding agent is an essential component in the priming prior to application of LEVELiT®. It acts as a pore sealer which will maintain the flow life and prevent air bubbles rising through the applied LEVELiT® F10 screed smoothing compound. Accordingly it is necessary to prime all surfaces with BONDiT®. With very smooth non-absorbent sub-floors e.g. power floated floors, epoxy coated water barriers, and ceramic tiles it is essential to apply iTe SLURRY® to promote better Inter-coat adhesion and/or to lightly grind the surface to promote adhesion.

1.4 MIXING

Use 5.0 litres of water per 24.0 kg bag. Do NOT over-water. Add the powder to the required amount of clean cool water in a clean mixing container whilst using a +/-600 rpm electric paddle mixed until a lump free screed is produced. This will take approximately 3 to 4 minutes. Stop the mixer and scrape the inside of the mixing vessel to allow any unmixed product to fall onto the paste. Briefly remix the LEVELiT® F10 and then discharge onto the affected floor.

Mixed LEVELiT® F10 should be applied within 5 minutes at 20°C. This time is extended at lower temperatures and reduced at higher temperatures.
1.5 APPLICATION
Pour the mixed LEVELiT® F10 onto the prepared sub-floor. The mixed mortar will flow out and self-level. Use a suitable notched epoxy rake or spreader to obtain the required thickness; while a long-handled pin leveller/rake with height adjustment will simplify this operation and yield more consistent results. A long handled spiked roller must be used to prevent air blisters from marring the finished surface. LEVELiT® F10 has excellent self-healing properties which extend for some 30 minutes or longer after the pour, which minimises cold joints and surface irregularities.

1.6 THICKNESS
LEVELiT®F10 can be applied at a minimum thickness of 0.3mm to a maximum of 10mm in a single application. Multiple layers can be applied to the dry previous layer with a BONDiT® application on top of the previous application, in order to build up to the required thickness. Contact our technical advisors for detailed information. Bulking-up of the product can be a viable option for significant sub-floor deviations where speed of drying is a factor.

1.7 COVERAGE
Approximately 1.7 kg of LEVELiT® F10 per 1 mm thickness per m². E.g. one 24kg bag of LEVELiT® F10 will give enough material to cover approximately 4.5m² at an average thickness of 3mm. NOTE: The coverage figure is based on a flat level surface. Additional material should be allowed for where the surface is rough or uneven.

1.8 GENERAL
All data given was tested at a room temperature of 20˚C and 50% humidity. Please be aware that the technical data may alter if the climatic conditions are in contrast to that in which the product has been tested, either hardening more quickly or setting slower.

1.9 WARRANTY
LEVELiT®F10 is guaranteed to be free of any manufacturing defect.

1.10 WARNING
Do not ingest. Keep away from children and pets. Do not empty into a drain. Wear rubber gloves, and in the event of contamination, rinse thoroughly with cold water. Seek medical advice if irritation or discomfort persists. For further information, consult the relevant health and safety data sheet.

GREEN BUILDING COUNCIL VOC REQUIREMENTS
LEVELiT® F10 contains no Volatile Organic Compounds and therefore is totally compliant with all relevant requirements to be classed as “green.” The standard short report, theoretical VOC content declaration and VOC confirmation notice is available on request or can be downloaded from our website— www.iteproducts.co.za.

1.11 IMPORTANT NOTICE
The information supplied in our literature or given by our employees is given in good faith. We reserve the right to update this information at any time without prior notice.
2. MATERIAL SAFETY DATA

2.1 IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND COMPANY

Name of substance/preparation:
Commercial product name: LEVELiT® F10

2.1.1 USE OF SUBSTANCE / PREPARATION
Commercial/Residential.
Used for: Levelling of floors
All other areas of application to be agreed with the Application Engineering/Technical Marketing Department of the manufacturer.

2.1.2 COMPANY NAME
Manufacturer/distributor: iTe Products (Pty) Ltd
Street: 7 Clarke Street South
State/postal code/city: Alrode, 1451
Telephone: +27 11 864 4918
Telefax: +27 11 864 2123
Information about the Safety Data Sheet: +27 11 864 4918
eMail: info@iteproducts.co.za

2.2 HAZARDS IDENTIFICATION

2.2.1 CLASSIFICATION
Classification (67/548/EEC, 1999/45/EC):
R-Phrase Description – irritant to eyes
This product is not a dangerous preparation within the meaning of Directive 1999/45/EC.

2.2.2 LABELLING
R-Phrase Description – 36/38 Irritant to eyes
S-Phrase Description

2.2.3 FURTHER HAZARDS TO HUMAN AND ENVIRONMENT:
The product does not have any further hazards

2.3 COMPOSITION/INFORMATION ON INGREDIENTS

2.3.1 CHEMICAL CHARACTERIZATION:
Mixture

2.3.2 DESCRIPTION:
Mixture of cement and sand mixture with other non hazardous additions

2.4 FIRST-AID MEASURES

2.4.1 GENERAL INFORMATION:
Under ordinary workplace conditions: No special measures required.
2.4.2 AFTER CONTACT WITH THE SKIN  
Wash with plenty of water or water and soap.  
First-aid measures cont.

2.4.3 AFTER CONTACT WITH THE EYES  
Rinse immediately with plenty of water. Seek medical advice in case of continuous irritation.

2.4.4 AFTER SWALLOWING  
If conscious, give several small portions of water to drink. Do not induce vomiting. In cases of sickness seek medical advice (show label if possible).

2.4.5 ADVICE FOR THE PHYSICIAN  
Due to its physical properties, may cause mechanical irritation. Product may agglutinate in the gastrointestinal tract. Medical assistance should be sought. Depending on the symptoms, invasive measures may be necessary.

2.5 FIRE-FIGHTING MEASURES  
2.5.1 SUITABLE EXTINGUISHING MEDIA  
Water spray, water mist, extinguishing powder, foam, carbon dioxide.

2.5.2 EXTINGUISHING MEDIA WHICH MUST NOT BE USED FOR SAFETY REASONS  
Water jet.

2.5.3 SPECIAL EXPOSURE HAZARDS ARISING FROM THE SUBSTANCE OR PREPARATION ITSELF, COMBUSTION PRODUCTS, RESULTING GASES  
No further relevant information available

2.5.4 SPECIAL PROTECTIVE EQUIPMENT FOR FIRE FIGHTING  
No further relevant information available

2.6 ACCIDENTAL RELEASE MEASURES  
2.6.1 PERSONAL PRECAUTIONS  
Wear a dust mask

2.6.2 ENVIRONMENTAL PRECAUTIONS  
Do not allow to enter into sewer, drainage or potable water systems

2.6.3 METHODS FOR CLEANING UP  
Take up mechanically and dispose of according to local/state/federal regulations.

2.6.4 FURTHER INFORMATION:  
Observe notes under section 7 with regards to safe handling  
Observe section 8 for information on personal protective equipment.

2.7 HANDLING AND STORAGE  
2.7.1 HANDLING  
Precautions for safe handling:  
Avoid dust formation.  
Precautions against fire and explosion:  
No special measures required
2.7.2 **STORAGE**

Conditions for storage rooms and vessels:
No special measures required
Advice for storage of incompatible materials:
not applicable.

2.8 **EXPOSURE CONTROLS AND PERSONAL PROTECTION EQUIPMENT**

2.8.1 **EXPOSURE LIMITS**

2.8.2 **EXPOSURE LIMITED AND CONTROLLED**

2.8.2.1 **EXPOSURE IN THE WORK PLACE LIMITED AND CONTROLLED**

General protection and hygiene measures:
Do not breathe dust. Do not eat when handling.
Personal protection equipment
Respiratory protection
In case of dust formation: fine dust mask without protection rating.
Eye protection
Recommendation in case of dust formation: tight fitting protective goggles.

2.8.2.2 **EXPOSURE TO THE ENVIRONMENT LIMITED AND CONTROLLED**

Prevent material from entering surface waters and soil.

2.9 **PHYSICAL AND CHEMICAL PROPERTIES**

2.9.1 **GENERAL INFORMATION**

Physical state / form....................: solid - powder
Colour ............................................: grey - brown
Odour .................................................: odourless

2.9.2 **IMPORTANT INFORMATION ABOUT THE PROTECTION OF HEALTH, SAFETY AND THE ENVIRONMENT**

Property: Value: Method:
Melting point / melting range ......: not applicable
Boiling point / boiling range ........: not applicable
Flash point..................................: not applicable
Auto-ignition temperature: product is not self-igniting
Lower explosion limit (LEL) ...........: not applicable
Vapour pressure...........................: not applicable
Bulk density..: 1300-1500 kg/m³ (DIN EN ISO 60)
Water solubility / miscibility.....: Insoluble sets in water
pH-Value ..................................................: 11
Viscosity (dynamic) .....................: not applicable
2.10 STABILITY AND REACTIVITY

2.10.1 GENERAL INFORMATION:
If stored and handled in accordance with standard industrial practices no hazardous reactions are known.

2.10.2 CONDITIONS TO AVOID
none known.

2.10.3 MATERIALS TO AVOID
none known.

2.10.4 HAZARDOUS DECOMPOSITION PRODUCTS
If stored and handled properly: none known.
At increased temperature: acetic acid.

2.11 TOXICOLOGICAL INFORMATION

2.11.1 GENERAL INFORMATION:
According to our present state of knowledge no damaging effect expected when treated in accordance with standard industrial practices and local regulations where applicable.

2.11.2 TOXICOLOGICAL TESTS
Acute toxicity
Primary irritation:
Eyes: irritating effect
Sensitization:
no sensitizing effects known
Further information:
The product shows the following aspects:
Irritant

2.12 ECOLOGICAL INFORMATION

2.12.1 ECOTOXICITY
No expected damaging effects to aquatic organisms.
Effects in sewage treatment plants (bacteria toxicity: respiration-/reproduction inhibition):
According to current knowledge adverse effects on water purification plants are not expected.

2.12.2 MOBILITY
No further relevant information available

2.12.3 BIO-ACCUMULATION POTENTIAL
No adverse effects expected.

2.12.4 OTHER HARMFUL EFFECTS

2.12.5 ADDITIONAL INFORMATION
General information:
2.13 DISPOSAL CONSIDERATIONS

2.13.1 MATERIAL
Do not allow product to reach sewerage system
Disposal should be in accordance with local, state or national legislation.
Mix product residue with water, allow to harden and dispose of as construction waste

2.13.2 UNCLEANED PACKAGING
Recommendation:
Completely discharge packaging. Paper packaging may be recycled

2.14 TRANSPORT INFORMATION

2.14.1 LAND TRANSPORT ADR AND RID
Road ADR:
Valuation ..................: Not regulated for transport
Railway RID:
Valuation ..................: Not regulated for transport

2.14.2 TRANSPORT BY SEA IMDG-CODE
Valuation ..................: Not regulated for transport
Marine Pollutant ..............................: no

2.14.3 AIR TRANSPORT ICAO-TI/IATA-DGR
Valuation ..................: Not regulated for transport

2.15 REGULATORY INFORMATION

2.15.1 NATIONAL REGULATIONS
National and local regulations must be observed.
For information on labelling please refer to section 2 of this document.

2.16 OTHER INFORMATION

2.16.1 MATERIAL
The above information describes exclusively the safety requirements of the product(s) and is based on our present-day knowledge. It does not represent a guarantee for the properties of the product(s) described in terms of the legal warranty regulations. Properties of the product are to be found in the respective product leaflet.

2.17 FURTHER INFORMATION:
Commas appearing in numerical data denote a decimal point. Vertical lines in the left-hand margin indicate changes compared with the previous version. This version supersedes all previous versions.
3. METHOD STATEMENT

3.1 BASIC LEVELITE APPLICATION

3.1.1 THICKNESS & USAGE

LEVELiT® F10 can be applied from 0.3mm thick to a maximum of 10mm in a single application. For thicknesses over 15mm, incorporate up to an equal volume of 3 or 6mm clean, dry fines-free graded gravel. Approximately 1.7 kg of LEVELiT® per mm per m² will be required. BONDiT® must be used as a primer onto the concrete substrate to prevent air bubbles from rising once the LEVELiT® applied, to ensure a proper flow of the compound over the substrate and to bind the surface well. LEVELiT® applied at an average of 4m² per litre.

LEVELiT® F10 is available in 24kg bags. BONDiT® is available in 5 & 25Litre Plastic Containers.

3.1.2 PREPARATION

Prior to applying LEVELiT® F10 Self Levelling Compound, it is important to determine that the substrate is sound (cracks are often an indication of delamination between the slab and sand/ cement screeds, and it is advisable to tap the screed at regular intervals and listen for hollow sounds which indicate poor inter-layer adhesion), with no loose or friable material, dry, i.e. less than 5%MC (Verify the maximum permissible screed moisture level of the floor covering to be installed, and that screed moisture tests indicate suitability.

LEVELiT® is resistant to moisture, and will not expand or delaminate when exposed to reasonable levels of screed moisture.

NOTE: For internal use only. It is recommended that direct to ground sub-floors be protected from rising damp to prevent dimensional changes in the floor covering (confirm the maximum permissible moisture content that the floor covering or adhesive can tolerate). Standard European practice has evolved that when vinyl flooring is to be installed, the substrate is to be sealed with an epoxy moisture barrier, or similar. VAPORiT® +PLUS epoxy moisture barrier system has been specifically developed for this purpose.

Should hollow areas be found, this is best rectified by establishing the affected area, cutting a border around the area with an angle grinder, removing the loose screed and filling the area with PATCHiT® Rapid Set Patching Compound.

Any large holes or saw cut joins should be patched or filled by pouring mixed PATCHiT® into them and trowelling the surface flush with the adjacent surfaces. Commence with the application once the PATCHiT® is dry.
Expansion joints:
Where these are encountered, it is important to honour them and establish the end client’s finish specification or detail to ensure compliance with technical slab movement requirements. A common practice is to mark the position of the joint on the walls adjacent before applying the LEVELiT®. Once dry, the LEVELiT® is cut with a grinder to open the joint.
Assess the access area where the LEVELiT® is to be mixed and if necessary, place protective plastic sheeting on the ground to prevent cement dust contamination. When the job is complete, it should be clean and tidy, as it was found.

3.1.3 PRIMING
The screed must be primed with BONDiTe® primer and bonding agent, using a lamb’s wool roller or brush, making sure that the entire surface is well coated. The BONDiTe® seals the concrete pores and promotes the smooth flow of the levelling compound while preventing air bubbles rising through the applied LEVELiT® F10.
To ensure that no bubbles arise, care must be taken that no uncoated spots are left. Please note that the primer must be allowed to dry properly before application of the levelling compound. This normally takes approximately 20 minutes.
At this point it is advisable to install the sealing strip to doorways and places where the compound is to end.
Bond 10 x 10mm foam tape to surfaces where the compound is to end, eg. doorways, stairs etc. This will prevent the self-leveller from running into areas not to be levelled.
Non-absorbent substrates such as power-floated concrete, ceramic or porcelain tiles must first be primed with iTe SLURRY which is rolled on with a mohair roller and allowed to dry.

3.1.4 MIXING
Use 5.0 litres of water per 24.0 kg bag. Do NOT over-water. Add the powder to the required amount of clean cool water in a clean mixing container whilst using a +/-600 rpm electric paddle mixed until a lump free screed is produced. This will take approximately 3 to 4 minutes. Stop the mixer and scrape the inside of the mixing vessel to allow any unmixed product to fall onto the paste. Briefly remix the LEVELiT® F10 and then discharge onto the affected floor.
Mixed LEVELiT® F10 should be applied within 5 minutes at 20°C. This time is extended at lower temperatures and reduced at higher temperatures.

3.1.5 APPLICATION
Pour the mixed LEVELiT® onto the primed substrate, spreading it out with a long handled pin leveller with adjustable skegs, or a notched rake suitable for the required thickness, “pushing” the compound to fill initial area, and the “pulling” or “drawing” the compound in one general direction until the entire surface is covered. The self-levelling properties of the LEVELiT® will ensure an even, smooth distribution of the compound. Roll the wet compound with a spiked roller gently and slowly, but thoroughly, at right angles to the draw, before the setting process advances too much. This will remove any small air bubbles and retain effective mixing or any deviations left by the skeg leveller. The person rolling the compound should wear spiked boots to minimise disturbance of the applied compound.
NB. Floor coverings can typically be installed the following day, 24 hours after the application of the levelling compound. When left uncovered, the new screed may become contaminated by building activities, and it is recommended that once cured, that it is protected by covering with a suitable material.
3.1.6 PUMP PREPARATION

Careful planning is important when applying LEVELiT® with a pump, as large areas are completed very quickly. Firstly the position of the mixer and pump is to be established to ensure an easy exit once the entire area is covered. Preferably two 15 Ampere electrical sockets should be close by and easily accessible, as is the case for water supply, and a suitable drain for waste water.

Assess the access area where the pump is to be located and if necessary, place protective plastic sheeting on the ground to prevent cement dust contamination. When the job is complete, it should be clean and tidy, as it was found.

Study the lay out of the area to be applied, and work out where to start, the progress route and the best way to get to the final point of exit. Check that the dispensing pipe reaches to the furthest point, and how it will be extracted at the end, without damaging the newly applied leveller.

Bond 10 x 10mm foam tape to surfaces where the compound is to end, eg. doorways, stairs etc. This will prevent the self-leveller from running into areas not to be levelled. Make sure it has adhered properly.

It is recommended that two people be available to direct the pipe outlet, (depending on area size), two people to draw the poured material with the skeg levellers, and two people to roll the applied mixture with long spiked rollers. One person is sufficient to break the bags into the mixer.

Open the water source and start the mixer and pump. Place the outlet of the discharge pipe into the drain, and monitor, to check that there is sufficient power and water supply, and that there is no obstructions in the pipe. The LEVELiT® bags are to be emptied into the mixer, and the outlet observed. Once the cementitious mix emerges, the pump should be turned off and the outlet pipe should be lifted at head height and taken to the starting area where the LEVELiT® is to be discharged.

Pour sufficient compound to allow for drawing of the compound to the desired thickness, and rake the compound out, filling the whole area. The two spiked rollers should now be introduced into the process, slowly rolling the applied area repeatedly to ensure that no air bubbles are entrapped, and that no compound build-up occurs.

Continuously break the bags into the mixer and proceed with the pour as per plan. The LEVELiT® representative will ensure that the correct consistency of product is maintained throughout the pour.

Drawing closer to the final stages, care needs to be taken in respect of when to stop adding compound, and to ensure that the last poured product is properly raked and trowelled for continuity of appearance. Leave the tap for water open to allow for thorough cleaning of the mixer, pump, pipe and equipment.

Pour any excess compound emitted from the hose into a bucket, and once the appearance is very watery, let it run into the drain, until the water runs clear. Turn off the tap.

3.1.7 GENERAL

In order to maintain a constant even drying process, windows should be closed and drafts avoided. All supplied data is based on laboratory tests conducted at 20°C, and a relative humidity of 50% as required by international standards. Based on practical building site conditions, temperatures should be between 10°C and 30°C. When higher temperatures are experienced, the drying will accelerate and allowance for this needs to be made by the applicator. Actual conditions experienced may result in slightly different results. Experience has shown that to achieve the best results in flatness and levelness, a depth of 4 to 5mm or more should be poured.

Specialist applications such as bulking out should be discussed with our technical staff.

Please do not hesitate to contact us for training or any queries you may have.
3.2 APPLYING LEVELiT OVER TILES

3.2.1 PRECAUTIONS
- **LEVELiT®** can be applied over existing ceramic or porcelain tiled floors. Certain precautions need to be taken before proceeding:
  - Check soundness and hollowness of tiles – remove and hollow sounding or loose tiles and apply **BONDiTe®** and then **PATCHiT®** to fill void as per standard PATCHiT® application methodology.
  - Check for moisture – moisture exceeding flooring covering specification must be dealt with by applying **VAPORiT® +PLUS** moisture barrier as per VAPORiT® +PLUS installation specification.
  - Check that the tiles are not coated with a sealer which could cause lack of proper adhesion. If so, the sealer must be stripped prior to proceeding.
  - Check that the tiles are not contaminated by oils or any materials which may hinder proper adhesion. Should moisture not be an issue, apply **iT e SLURRY®** as shown below.

3.2.2 INSTALLATION

3.2.2.1 STEP 01
Pour the iTe SLURRY onto the tiles and roll thinly and evenly with a Mohair roller.

3.2.2.2 STEP 02
Allow the iTe SLURRY to dry and to harden.
3.2.2.3  **STEP 03**

Apply LEVELiTe Self levelling compound (F10, F30 or F50) onto floor as per standard LEVELiTe application methodology.

Allow the floor to cure and install the floor covering 12 hours later, using the appropriate GRIPiTe adhesive.

**NOTE:** When priming with BONDiTe® over old ceramic tile adhesive, please ensure that the old adhesive is properly sealed, even applying a second coat, due to the porosity of the adhesive and the tendency for air to escape during curing, causing pinholes in the dry LEVELiT®.

3.3  **BULKING UP LEVELiTE**

Bulking out of LEVELiT® is undertaken where the regular application of a self-levelling compound to the thickness exceeding say 15mm is prohibitive from a cost perspective, and where the installation of a regular sand/cement screed will result in serious time delays due to the slow drying process of the screed. The bulking up process is a two-step process, which enables the installation of vinyl flooring within 24 hours at a reduced cost.

3.3.1  **PREPARATION**

Prior to applying the buked-up system, it is important to determine that the substrate onto which it is to be applied is sound. (Cracks are often an indication of delamination between the slab and screed. Tap the screed at regular intervals and listen for hollow sounds or changes in pitch.) This identifies potential hollow spots. The substrate should not be friable or powdery. If the substrate is sound, but slightly (not excessively dusty), this can be improved by applying a slurry to the surface and allowed to dry before commencing with priming. Should the screed not be sound, remove all friable or loose materials until a sound base is obtained.

Determine Screed Moisture Levels – Measure the screed moisture levels using appropriate, reliable test equipment to check that the moisture levels are below the tolerances of the floor covering to be installed. (SANS 10070 code of practice stipulates that if the screed moisture exceeds 3% moisture content (70% RH), then a moisture primer (barrier) should be applied.)
If the screed moisture is higher than permitted, apply VAPORiTe® +PLUS water-based epoxy moisture barrier in accordance with the Data Sheet for VAPORiTe® +PLUS.

The Bulking-up process entails applying a bulked material layer to build the level up to a point where a second, conventional layer of LEVELiT® is added to achieve the final thickness allowing for the thickness of the floor covering to be installed.

Depending on the size of the area to be bulked-up, two methods can be used to set out the depth of the bulking to be done.

**Large Areas:**
At regular intervals drill holes to hold rebar vertically. The intervals can be say at 1m squares, until the entire surface to be bulked up is marked out. Use a fast setting epoxy adhesive to hold the bars in place vertically. Using a laser level, mark the rebar rods at the desired height below the final level to be achieved. (Final floor level minus floor covering thickness minus say 3mm self-levelled LEVELiT® application). Cut the rebar off at these marked heights.

**Smaller Areas:**
Set up the laser level in the recess, determine the level to be achieved with bulking up, or the level below the final floor surface as above, and apply a chalk line to the side walls of the recess.

### 3.3.2 APPLICATION
Ensure that the surface of the recess is dry. (If Moisture Barrier has been applied, ensure that it has set) Prime the surface with BONDiTe® until the screed surface and walls are covered properly. Allow to dry.

Fill the recess with 6 to 8mm washed stone, creating a level surface to the level of the rods, or wall markings.

![Fig 04: Stone spread in area to be filled](image1)
![Fig 05: Levelled stone spread](image2)
Mix LEVELiT® as per the data sheet, and pour the mixed compound into the stone. Use a garden rake, spade or trowel to mix the compound with the aggregate (stone) ensuring that the aggregate is properly coated and settles on the substrate.

Maintain the desired level, compacting with a straight edge, so that any aggregate does not protrude excessively.

Repeat this process until the entire recess is filled.

Due to the high volume of LEVELiT® in this application, it will tend to set faster than normal. It is important to work fast, and maintain a constant flow of product to be integrated with the aggregate.

Allow the bulked-up mix to cure for at least 2 hours, and ensure that it is sound enough to be walked on.

Apply BONDiTe® primer liberally to the bulked-up surface and allow it to dry. (During drying, it will change colour from white to clear, when it is finally dry).

Mix and apply the self-levelling layer of LEVELiT® as per normal (see technical data sheets) to the height ready for installation of floor covering, and allow it to cure till the next day, ready for installation of the flooring.

**Materials Calculation:**

Stone 6 – 8mm washed stone:

+/- 15,5Kg per m² per 10mm thickness

LEVELiT® For Bulking

F30 = 1,5Kg per m² per 1mm thickness x 0,6

Thereafter the final topping of LEVELiT® at the rate of 1,5 Kg per m² per 1mm thickness
4. THEORETICAL (VOC) CONTENT

4.1 PRODUCT:
LEVELiTe F10 Self Levelling Floor Screed Compound

4.2 ABBREVIATIONS
S.G. = Specific Gravity
g/ml = grams/millilitre
g/l = grams/litre

4.3 FORMULAS
Sum of VOC’s in Sealer/Primer formulation = VOC %
VOC (g/l) = VOC % x S.G. x 10

4.4 S.G. (G/ML) = 1.00G/ML
4.5 VOC % = 0%
4.6 VOC (G/L) = 0 X 1.00 X 10 = 0G/L

Maximum VOC content (Specified by Green Building Council of South Africa): 50g/l

Peter Funke
Product Development Manager
5. SHORT REPORT VOC

31 March 2015

Short Report: Product LEVELiT e F10 Self Levelling Floor Screed

iTe Products LEVELiT® F10 Self Levelling Floor Screed Compound meets the Green Building Council of South Africa’s credit criteria for the following reasons:

Maximum VOC allowable (gms/litre)  50g/l
LEVELiT® F10  0g/l

This is based on the fact that the product contains no organic solvents.

I declare the above information to be correct

Signed:

Alistair Mac Dougall
6. VOC CONFIRMATION NOTICE

7 August 2014

To: All interested Parties

Dear Sir/Madam,

Re: GBCSA requirements for VOC levels in flooring adhesives, sealers and primers

We hereby confirm that LEVELiTe F10, F30, F50 and F100 Self Levelling Floor Screed Compounds as manufactured by iTe Products (Pty) Ltd comply with the GBCSA requirements in respect of permissible VOC levels in flooring adhesives, sealers and primers.

The attached Short Report, VOC Datasheet and this signed letter provides the necessary supporting documentation required as per page 107 of the GBCSA Technical Manual.

The Flooring Contractor must provide written confirmation that LEVELiTe F10, F30 or F50 is to be used in the installation of the floor covering.

Should there be any questions or queries, please contact the writer at 082 772 9137 or via e-mail at sales@iteproducts.co.za

Yours faithfully,

Alistair MacDougall
7. WARRANTY

iTe PRODUCTS warrants that LEVELiTe® F10 is manufactured to comply with international EN standards for P2 and P3 class self levelled screeds in respect of Flow determination, setting time, Drying Kinetics, and compressive strength.

LEVELiTe® F10 is compliant with EN expansion and shrinkage standards, is resistant to substrate moisture levels below 5% screed moisture, and will not expand or delaminate. It will also not powder or soften. LEVELiTe® F10 self-levels to an end finish compliant with SANS 10070:2007, provided the thickness of application allows the elimination of deviations. The surface hardens to 18MPa, and is suitable for light castor traffic and conventional foot traffic. LEVELiTe® F10 is typically recommended for use in residential and light commercial applications, provided the sub-base allows.

This warranty is based on the substrate being sound, dry and free of contamination. All application is to be carried out in strict compliance with the method statement as issued.

iTe PRODUCTS further warrants that the products are manufactured to strict quality control standards and that the products supplied are free of defect. We cannot be held responsible for failure due to the substrate failing, or physical or excessive mechanical damage occurring to the applied product. It must be noted that the product is porous and that it will stain if exposed to oil or chemical spillages.
## 8. INFORMATION SHEET

F10, F30 and F50 Self Levelling Compound Information Sheet

As a basis for evaluation of self-levelling compounds we use the applicable European Standard EN 13813:2002. This information sheet tries to set out the criteria used in the evaluation, and where our LEVELite® products are positioned. Products are classified under performance classes, P2, P3, P3R, P4 and P4R. The table at the end of this sheet sets these out.

<table>
<thead>
<tr>
<th>DESCRIPTION</th>
<th>RANGE OF CONFORMITY – WHAT IS ARE GOOD VALUES.</th>
<th>EXPLANATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Compressive strength</td>
<td>Wide range of conformities are applicable but most screeding compounds range between 20-30MPa</td>
<td>What does MPa really mean? The actual load or force the material can handle before deforming (crushing in this case) Calc: 1 MPa = 1N/mm² = 0.102 kg force/mm² E.g. The maximum load for a trolley wheel that has a contact area of 10mmx25mm on a screed with a compressive strength of 20MPa would be: 20 MPa = N (force)/250mm² (area) N(force) = 5000 Newton Therefore the point load for a surface contact area of the 10mmx25mm wheel can be as much as +/-510kg load per wheel For the same wheel size and a 30 MPa substrate the wheel could exert a load of 765kg</td>
</tr>
<tr>
<td>2. Flexural strength</td>
<td>Wide range of flexural strength are applicable but good values would range between 6-10 MPas</td>
<td>Flexural strength is the tensile force that the material can withstand. A typical example of this is the higher the flexural strength the better the product can withstand excessive shrinkage without cracking or slab deflections due to loading of the slabs.</td>
</tr>
<tr>
<td>3. Wear resistance</td>
<td>The best values attainable for abrasion resistance is in the class AR0.5 in accordance to the BCA testing method</td>
<td>This is one of the most important features in high traffic areas such as hospital corridors and the like in conjunction with vinyl application. The class rating AR0.5 means that the average wear resistance is no more than 50μm over the given test area.</td>
</tr>
<tr>
<td>4. Bonding strength</td>
<td>Bonding strength is the amount of force needed to pull the screed from actual substrate. This is described in MPa or N/mm². A very good class would be a B2.0 = 2MPa</td>
<td>The bond strength is a very important aspect to prevent delamination of the screed. Screeds are always subject to some or other force within itself. Reason for this can be internal or external. Internal forces are created by shrinkage or expansion of the screed itself and external factors would be issues such as deflection of suspended slabs when placed under load.</td>
</tr>
<tr>
<td>5. Setting time</td>
<td>A good setting time is around 30-40 min on Self Levelling Screeds.</td>
<td>Fast track construction in today’s world calls for quick setting systems. A fine line is also drawn here to allow the contractor enough time to apply the product but have it cure sufficiently to be able to lay the floor covering 24h later.</td>
</tr>
<tr>
<td>6. Consistency /Flow</td>
<td>These are more based on internal testing of the manufacturer and flow should be consistent over the duration up until initial setting of the screeding compound</td>
<td>Proper flow of the screeding compound facilitates the system to find its true level and to fill all deviations and voids in the substrate leaving a smooth and level surface to apply the floor coverings on to.</td>
</tr>
<tr>
<td>7. Shrinkage in dry environment</td>
<td>Shrinkage is not allowed to be in excess of 1mm/m A safe shrinkage number would be between 0.3-0.5mm/m</td>
<td>Shrinkage comes from excess water in the system evaporating into the air. This leaves voids in the screed resulting in shrinkage. If the shrinkage becomes excessive (&gt;1mm/m) then internal forces will exceed the internal flexural strength on the screed, resulting in cracking.</td>
</tr>
<tr>
<td>8. Expansion in a wet environment</td>
<td>Expansion is not allowed to be in excess of 1mm/m. A safe expansion number would be 0.3-0.5mm/m</td>
<td>Most levelling compounds are subject to expansion under wet/most conditions. An excess expansion will result in the internal forces exceeding the screeding bond strength. Bonding strength should therefore be around 2MPa to avoid any delamination.</td>
</tr>
</tbody>
</table>
### DESCRIPTION: RANGE OF CONFORMITY – WHAT IS GOOD VALUES.

<table>
<thead>
<tr>
<th>DESCRIPTION</th>
<th>RANGE OF CONFORMITY – WHAT IS GOOD VALUES.</th>
<th>EXPLANATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Compressive strength</td>
<td>Wide range of conformities dependent on application requirements— 15 to 40MPa+</td>
<td>MPa equates to the actual load or force the material can handle before deforming (being crushed). Calc: 1MPa = 1N/mm² = 0.102kg force/mm². Eg. A trolley wheel with a contact surface area of 25 x 10mm, on a 25MPa LEVELiTe F30 screed can bear a maximum load of 637.5kg.</td>
</tr>
<tr>
<td>2. Flexural strength</td>
<td>Wide range of conformities dependent on application requirements— 6 to 10MPa</td>
<td>Flexural strength is the tensile force that the material can withstand. I.e: The higher the flexural strength, the better the product can withstand excessive shrinkage without cracking, or slab deflections due to loading of the slabs.</td>
</tr>
<tr>
<td>3. Wear resistance</td>
<td>The best values attainable for abrasion resistance is in the class AR0.5 in accordance with the BCA test method</td>
<td>This is one of the most important features in high traffic areas such as hospital corridors and the like in conjunction with vinyl application. The class rating AR0.5 means that the average wear is no more than 50µm over the test area.</td>
</tr>
<tr>
<td>4. Bonding strength</td>
<td>Bonding strength is the amount of force needed to pull the screed from the substrate. This measured in MPa or N/mm². A very good class would be a B2.0 = 2MPa.</td>
<td>The bond strength is critical to prevent delamination of the screed. Screeds are continually subject to forces within itself, either internal or external. Internal shrinkage or expansion, or external factors such as deflection of slabs can cause delamination.</td>
</tr>
<tr>
<td>5. Setting time</td>
<td>Initial Set—25 to 30 minutes Walkability—2 h30min Final Set—24 Hours 75% Final hardness—72 hours Final Hardness—28 Days</td>
<td>Due to site conditions, the newly laid screed must be able to take foot traffic asap. This should be in approximately 2 hours. If the setting is too rapid, the product is very difficult to apply without dry joins. The drying of the screed should enable installation of vinyl after 24 hours. (thickness dependent)</td>
</tr>
<tr>
<td>6. Consistency /Flow</td>
<td>The better the flow, the better the self-levelling properties. The flow should be consistent during the duration of the application until the initial set commences. The flow test should exceed 135mm diameter.</td>
<td>Proper flow of the screeding compound facilitates the system to find its true level and to fill all deviations and voids in the substrate, leaving a smooth and level surface ready for the application of floor coverings.</td>
</tr>
<tr>
<td>7. Shrinkage in dry environment</td>
<td>Shrinkage is not allowed to exceed 1mm/m1 (SANS 10070:2012). A safe shrinkage number would be between 0.3 and 0.5mm/m1.</td>
<td>Shrinkage comes from excess water in the system evaporating into the air. This leaves voids in the screed resulting in shrinkage. If the shrinkage is excessive, (&gt;1mm/m1), then the internal forces will exceed the internal flexural strength on the screed, resulting in cracking.</td>
</tr>
<tr>
<td>8. Expansion in a wet environment</td>
<td>Expansion is not allowed to exceed 1mm/m1 (SANS 10070:2012). A safe expansion number would be between 0.3 and 0.5mm/m1.</td>
<td>Most levelling compounds are subject to expansion under wet/moist substrate conditions. An excess expansion will result in the internal forces exceeding the screed bond strength. Bonding strength should be around 2MPa to avoid any delamination.</td>
</tr>
</tbody>
</table>

### CLASS FACTORS PRODUCT

<table>
<thead>
<tr>
<th>CLASS</th>
<th>FACTORS</th>
<th>PRODUCT</th>
</tr>
</thead>
<tbody>
<tr>
<td>P2</td>
<td>Premises where there are no intense constraints. Static constraints, &lt;2MPa, no castors, typically light commercial and residential.</td>
<td>LEVELiTe F10, F30</td>
</tr>
<tr>
<td>P3</td>
<td>Premises such as offices using castor chairs, corridors (e.g. hospitals) with trolleys moved by hand, hospital wards and heavier trafficked commercial areas.</td>
<td>LEVELiTe F30</td>
</tr>
<tr>
<td>P3R</td>
<td>Premises classified as P3, which bear heavy rolling traffic (fork-lifts, heavy vehicles) or intense loads.</td>
<td>LEVELiTe F30, F50</td>
</tr>
<tr>
<td>P4</td>
<td>Premises classified as P3, which bear heavy rolling traffic loads, intense loads or repetitive and severe shocks.</td>
<td>LEVELiTe F50</td>
</tr>
</tbody>
</table>
# LEVELITE

## CLASS OF PERFORMANCE

<table>
<thead>
<tr>
<th></th>
<th>P2</th>
<th>P3</th>
<th>P3R</th>
<th>P4R</th>
<th>F10</th>
<th>F30</th>
<th>F50</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flow Determination Flow Determination</td>
<td>Initial Diameter 150mm</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>155mm</td>
<td>155mm</td>
<td>155mm</td>
</tr>
<tr>
<td></td>
<td>10 Min</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>155mm</td>
<td>155mm</td>
<td>155mm</td>
</tr>
<tr>
<td></td>
<td>20 Min</td>
<td>135mm</td>
<td>135mm</td>
<td>-</td>
<td>155mm</td>
<td>155mm</td>
<td>155mm</td>
</tr>
<tr>
<td>Initial Set No Specification - Ideally should be &gt;20 Minutes</td>
<td>&gt;30 Min</td>
<td>&gt;30 Min</td>
<td>&gt;30 Min</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Walkable No Specification - Ideally should be &lt;3 Hours</td>
<td>2 Hours</td>
<td>2 Hours</td>
<td>2 Hours</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Layable No Specification - Ideally should be &lt;48 Hours</td>
<td>24 Hours</td>
<td>24 Hours</td>
<td>24 Hours</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Drying Kinetics No Specification - Ideally should be &lt;3 Hours</td>
<td>&lt;2.5%</td>
<td>&lt;2.5%</td>
<td>&lt;1%</td>
<td>&lt;1%</td>
<td>&lt;1%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Abrasion resistance No Specification - Ideally should be &lt;48 Hours</td>
<td>&lt;8 a 10</td>
<td>TBA</td>
<td>&lt;2</td>
<td>&lt;2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Flexural Strength 28 days MPa No Specification - Ideally should be &lt;48 Hours</td>
<td>&gt;6</td>
<td>&gt;10</td>
<td>&gt;12</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Compressive Strength 28 days MPa</td>
<td>&gt;10</td>
<td>&gt;18</td>
<td>18</td>
<td>25</td>
<td>35</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Adhesion Strength Initial</td>
<td>&gt;0.5</td>
<td>&gt;1</td>
<td>&gt;1.0</td>
<td>&gt;1.5</td>
<td>&gt;1.5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wet</td>
<td>&gt;0.4</td>
<td>&gt;0.8</td>
<td>&gt;0.4</td>
<td>&gt;0.8</td>
<td>&gt;1.2</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
9. SUGGESTED SPECIFICATION

Apply _______ m² LEVELiT® F10 self-levelling compound system in accordance with the manufacturer’s specifications to a thickness of _______ mm after priming with BONDiT primer.