

1.1 Inspecting and preparing floor surfaces

When fitting carpet and carpet tiles the subfloor always demands special attention. The subfloor quite literally forms the base on which the carpet and carpet tiles have to display their qualities and characteristics. Aspects such as moisture, planess, smoothness, a porosity and compression strength are extremely important in that respect. Requirements differ with the type of subfloor involved. The various types concerned are described separately below. In general it can be said that the subfloor must comply with the relevant Australian Standards (AS 2455.1:2007 & AS 2455.2:2007).

Note: If there is a subfloor condition that is not mentioned here, please contact the Technical Services Department at Desso before undertaking installation. We will then be able to advise you with respect to floor conditions in relation to the application options for Desso contract carpet and carpet tiles.

1.2 Concrete Subfloors

Always check a concrete subfloor for moisture, pH and porosity. Moisture testing should be done in accordance with ASTM F 2170-11 (Standard test method for determining Relative Humidity in Concrete Slabs using In Situ probes) and pH testing in accordance with ASTM F 710-11. Please follow the requirements of the levelling compound and/or adhesive manufacturer's recommendations in regards to the acceptable Relative Humidity (RH) and pH of the slab before commencing the installation. Furthermore, the subfloor should also be continuously free from moisture. Check the ventilation under the floor and in the outer walls. As a rule there should be 5cm² ventilation per m² of floor surface. A suspended concrete slab demands a good isolation layer. The subfloor should also be clean, flat, porous, solid and free from grease and other contaminants. There should be no cracks, loose flaky areas or irregularities present. If the subfloor is granular, rough or uneven it will require levelling. Porous and/or granular subfloors should first be prepared using an acrylic or polyurethane based primer. If applicable an acrylic based primer is preferable, but that form of preparation is the least environmentally friendly. The instructions for the product concerned should therefore be followed extremely carefully. Sand off any irregularities and level using a waterproof cement based, or latex levelling compound. Sand wherever necessary when dry.

1.3 Extremely smooth and dense floors (e.g. Granito tiles or Terrazzo)

Levelling is also often necessary on smooth and dense floors, especially if there are any rough spots on the surface. Tiled floors often require levelling. First ensure that a good adhesion surface exists by applying a primer recommended by the adhesive manufacturer, before levelling. In case any 'sagging' occurs along the joins or seams levelling will have to be repeated. Sand wherever necessary, when dry and hard.

1.4 Subfloors with an existing hard covering

In case the subfloor has already been finished with a hard covering such as linoleum, PVC or suchlike, the following precautions should be taken. Check whether all of the existing covering is still firmly attached to the subfloor. If any areas are damaged they will have to be repaired first and if the existing covering cannot be repaired, the existing covering should be removed completely! Follow the levelling compound and/or adhesive manufacturer's installation instructions in regards to the correct preparation of the subfloor (i.e. cleaning or priming over a hard floorcovering) and the application of the primer, levelling compound and adhesive.

Note: if you have removed the existing covering as a result of irreparable damage, before proceeding any further read the remarks in the section entitled 'Floors on which a previous covering was adhered'. The instructions described in that section should be followed very carefully.

1.5 Wooden floors

Wooden floors in particular, despite being fitted with a hardboard finishing layer, can nevertheless cause the formation of impressions in the carpet over the course of time. That also applies to the hardboard itself as a consequence of the natural working of the underlying wood. The best solution for this problem is a subfloor constructed from e.g. plywood, hardboard or MDF. In that manner sufficient solidity can be obtained to prevent any impressions of the underlying floor from forming.

In general it can be said that a wooden floor never possesses absolute solidity by definition. All the more reason for paying the utmost attention to the finishing layer.

The moisture content of timber, plywood or particleboard subfloors can be determined with an electrical resistance type moisture meter.

Variations of up to 5% in moisture values can occur depending upon the species type and temperature of the timber. Please refer to AS/NZS 1080.1:1997 for the temperature and moisture content correction for the different timber species.

While it is generally difficult to specify exact percentage thresholds, a percentage reading above 15% would indicate a higher than acceptable level of moisture in a timber floor.

1.6 Floors on which a previous covering was adhered

All floors on which some form of covering was previously adhered require a thorough inspection as per the requirements of AS 2455.1:2007 & AS 2455.2:2007. Once the old covering has been removed the subfloor will almost certainly show signs of damage. Furthermore, some old adhesive will also inevitably be left remaining. Always remove any old adhesive first, thoroughly remove all dirt and dust from the floor and apply a primer or adhesive layer in accordance with the primer and/or adhesive manufacturer's recommendations, and allow it to dry thoroughly. The floor should then be levelled and sanded wherever necessary.

2.1.1 Inspecting the floor

A detailed inspection of the floor and materials is essential. The need to inspect the floor for damp, ventilation, etc. has already been discussed extensively. Please refer to the relevant passages in the first part of chapter 2 and follow the requirements noted in AS 2455.1:2007.

2.1.2 Site conditions for fitting

As per the requirements of AS 2455.1:2007 the carpet must be conditioned onsite and be allowed to come to the same temperature and relative humidity as the area where it is to be installed. Only then may a start be made with fitting. Furthermore, when fitting Desso contract carpet or carpet tiles a minimum working temperature of 15 C is essential. Humidity, especially when adhering, may also be an influencing factor and therefore has to be taken into account. Always follow the instructions of the adhesive, manufacturer (see list of approved adhesives under 6.4 on the last page of these instructions).

For rooms with floor heating systems, the only technique applied is full adhesion. The heating temperature needs to be reduced 24 hours before installing; 48 hours after installation is completed, the heating system can be turned up slowly. During wintertime, the floor temperature has to be reduced to a level between 15° and 18°C.

2.1.3 Preparatory steps before installing broadloom carpet

The following preparations always have to be done before installing sheets of floorcovering:

- First step is the planning and lay out of the carpet where there is no absolute rule.

The number of seams should be kept to a minimum at all times. In areas with heavy and directed traffic, traffic flow should be along rather than across the seams. Joints are

always fitted on top of each other, never next to each other. The exception here is when the installation is done using carpet gripper, where sheets are joined exactly next to each other by sewing, gluing or heat taping the joins.

- Second step: fitting and trimming of the floorcovering. Pay attention to the squareness and the overlapping of the edges during cutting to achieve acceptable seams. Also pay

attention to extra material to cover door openings. The above mentioned steps are just very general rules. In the next paragraphs we will deal more specifically with the different techniques of installing carpet strips.

2.2 Adhering

Fold the last section laid back halfway along its length. Make a marking line on the subfloor alongside the last section but one, also lengthwise, and then fold it half back. Repeat the process up to the first section laid. Using the adhesive manufacturer's recommended notch trowel and application rates start trowelling on the adhesive. Work from the centre of a sectional length and start with the last folded section. Spread the adhesive up to approximately 25cm away from the marking line. File new notches in the spreader whenever necessary. In general applicable: If the adhesive manufacturer does not recommend a specific notched trowel size, use a V2 notched trowel.

Note: Always read the instructions supplied with the adhesive with respect to the type of adhesive spreader required, the correct type of adhesive and the quantity to be used.

2.3 Patterned broadloom carpet

Fitting patterned carpet requires a great deal more attention and time than plain carpet.

A good section plan that takes correct matching and pattern repeat length into account is an essential component of fitting patterned carpet.

2.3.1 Pattern shifting (run out)

Slight pattern shifting should always be taken into account. Pattern shifts can not only occur during the production process, but also as a result of shrinkage under changing atmospheric conditions (e.g. during transport). By using the correct installation equipment and techniques a qualified carpet layer should be able to minimize the pattern run out. The extent to which any pattern shift is visible in practice is greatly dependent on the size of the area, the pattern and the colour, and the corrections required when fitting. The application of straight stripes across the width of the carpet is not recommended, as even with good correction a slight shift virtually always remains visible. The Desso project group can supply you with supplemental information in this respect.

2.3.2 Pattern shift between pieces from the same production

We note that the diagrams in the installation instructions for the 2 above points do not coincide with the information supplied. You go from section 3.11.3 Bowing to diagrams of pattern run out. In our opinion the diagrams for pattern run-out should come immediately after the above 2 points then have point 3.11.3 and then the diagrams for bowing. Then have the next section "measuring up" after the diagram for bowing as it is confusing.

2.3 Adhering carpet with underfloor heating

The underfloor heating must have been in operation for at least 10 days before the carpet is laid to ensure that any residual moisture has completely evaporated. The

carpet can of course be laid loose, but that is not recommended for large areas, as corrugations or shrinkage may occur. If the carpet is being stretched the use of underlay is recommended. When using underlay the heat permeability resistance of the underlay and carpet should be added together. The collective value may not exceed a value of 0.17m²/K/W. When gluing the carpet with a dispersion adhesive the floor temperature may never be any higher than 200 °C. In this connection follow the instructions supplied by the adhesive manufacturer and ensure the adhesive being used is in fact suitable for application on a floor with underfloor heating.

3.1 Concrete floors

See Section 1.2 in regards to moisture testing the subfloor. All concrete subfloors should be tested prior to commencing the installation of Desso carpet or carpet tiles. The relative humidity in the room may not be higher than 75%.

3.1.2 Anhydrite floors

Please check with the manufacturer of the Anhydrite screed as to the moisture testing and RH and pH requirements. All concrete subfloors should be tested prior to commencing the installation of Desso tiles. The relative humidity in the room may not be higher than 75%.

3.1.3 Wooden floors

All loose parts must be removed and the surfaces must be levelled. Wooden floors in a poor condition should be re-surfaced using plywood or hardboard sheets. Hardboard sheets (always install rough side up) should be fastened at 15 cm centres, i.e. 15 cm apart, using a spot nailer/stapler. The same method can be used for plywood up to 6 mm thick. Plywood over 6 mm thick should be screwed to the floor at ± 23 cm centres, i.e. ± 23 cm apart. The same goes for chipboard and MDF.

The moisture content of timber, plywood or particleboard subfloors can be determined with an electrical resistance type moisture meter.

Variations of up to 5% in moisture values can occur depending upon the species type and temperature of the timber. Please refer to AS/NZS 1080.1:1997 for the temperature and moisture content correction for the different timber species.

While it is generally difficult to specify exact percentage thresholds, a percentage reading above 15% would indicate a higher than acceptable level of moisture in a timber floor.

3.2 Others floors

Vanished and polished surfaces should be prepared in accordance with the adhesive manufacturer's recommendations.

3.3 Important considerations concerning the floor

- All floors should be dry, clean, solid and resistant to Compression
- Never install tiles on a sub-carpet or on an existing carpet
- On all floors use 100% Pressure Sensitive adhesive
- Make sure the pressure sensitive adhesive is well dried before installing the tiles
- On computer floors always use conducting pressure sensitive adhesive, so the static electrical person charge can be led away horizontally/vertically. If necessary lay within every room till max 40 m² a copper band of 1.25 m. transversely underneath the carpet tiles and make sure the copper band is well earthed. In larger rooms use a 1.25 m. copper band for every 40 m².

4.1 Recommendation

All Desso carpet tiles should be acclimatised to the ambient conditions of the facility before installation is commenced. The palletised product should be unwrapped removed from the pallet. They should be carefully stacked and allowed 12-24 hours acclimatisation before laying is commenced.

Carpet tiles do not require the use of a permanent bond adhesive, gripper or underlay. We recommend the use of an approved pressure sensitive adhesive (which is applied to the whole of the surface area, especially underneath all seams; see the illustration.) Once the adhesive has been allowed to dry (or tack off according to the adhesive manufacturers timing instructions) the carpet tiles can be placed in position.

Note: All cut and end tiles should be laid tightly fitting to the wall.

4.2 Laying Desso carpet tiles

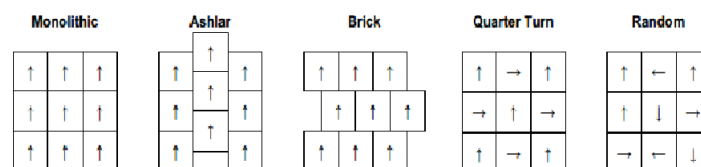
Never start installing carpet tiles against a wall. Always start from a calculated point in the room along a perpendicular line or chalk line. In offices start with the corridor and install the rooms afterwards, in order to obtain a good connection. Apply one of the recommended pressure sensitive adhesives to the area convenient in size and once the adhesive has become completely dry, the carpet tiles can be installed in accordance with the illustration. The tiles should be firmly fitted together with a hand stretcher.

Be sure that the carpet tiles are correctly abutted to limit the appearance of joints to a minimum. To ensure the tiles are tensioned correctly, measure the carpet tiles after every 10 tiles and check the measurement to ensure they have not been installed too tightly or with gaps between the tiles. Care should be taken with cut pile products to avoid trapping edge tufts between the tile joints. The use of hand-knicker ensures that the tiles be butted firmly together: joints will be less visible that way.

The directional arrows on the back of the carpet tile should be followed, unless agreed otherwise by the contractor and the purchaser.

4.3 Effects

The majority of carpet tiles may be installed in one of five different ways as shown in the diagram below. The arrows on the back of the tiles indicate lengthwise. On the sample cards and on the tile boxes you will find Desso's recommendation for the direction or multiple directions that the tiles can be installed.



Note: Please refer to the product specifications in regards to suitable laying direction. Some products have limited suitability for certain laying directions which may directly impact the desired installation geometry and design. Seams may be

more or less apparent dependant on the geometry. The laying direction of the installation will not affect the performance of the product.

4.3.1 Quarter-turn appearance

For this effect the tiles should be installed with the pile direction at right angles to the adjacent tile. This type of installation may be necessary for carpet tiles with a short (loop) pile and needle felt or fibre bonded tiles. This type of installation should not be used with cut pile products.

4.4 Raised flooring systems

Raised access flooring systems are normally 600 mm panels. Desso is able to supply carpet tiles in the 500 mm format and certain products can be made available in 600 mm. The installation technique will vary dependent on whether 500 mm tiles are laid conventionally as with a normal floor or whether a 600 mm tile is placed over the access floor panels. Either size of carpet tile can be installed over a raised access flooring system using a recommended pressure sensitive adhesive. The adhesive should be applied with a roller and care should be taken to ensure that the adhesive stops before the edge of the raised panels. This enables panels to be lifted freely as and when the need arises.

4.5 Castor chairs

In areas where office furniture has castor wheels it is imperative that the tiles are fully adhered with the recommended pressure sensitive. To prevent damage occurring to the tiles, the castor wheel should have a minimum diameter of 50 mm and be at least 20 mm wide.

4.6 Stairs

Carpet tiles are suitable for installation on stairs, if fitted with nosings. The tiles and sections of tiles must be secured with the adhesive manufacturer's recommended system on the treads. The risers can be secured with either a single coat of adhesive applied to the riser or with a second coat applied to the back of the tile which, when allowed to dry, will act like a contact adhesive.

4.7 Subfloor

When installing needle felt carpets the conditions of the subfloor should be the same as with other textile floor coverings, such as broadloom and carpet tiles. This means that the subfloor has to be even, sturdy, free of cracks and dry. Dense surfaces, such as PVC, need to be prepared in accordance with the adhesive manufacturer's recommendations. In situations with a floor heating system the temperature has to be reduced before installation, in the same manner as described in the chapters about broadloom carpets and carpet tiles. After the installation the temperature has to be gradually turned up. For floors with old adhesive see the referring paragraphs in second chapter.

4.8 Approved Adhesives

Approved adhesives are as follows:

Bitumen Backed tiles – Nexus 970, 848 and 840, Holdfast 410, Quin Global FS 470 Spray adhesive, Mapei Ultrabond EcoTac

Ecobase backed tiles – Nexus 970, 848 and 840, Holdfast 410, Quin Global FS 470 Spray adhesive, Mapei Ultrabond EcoTac

Soundmaster backed tiles – Quin Global FS 470 Spray adhesive, Mapei Ultrabond EcoTac, Nexus 970,

All primers and levelling compounds should be compatible with the adhesive used and approved by the relevant adhesive manufacturer.