

seams and place the head of the power stretcher in the middle of the seam being stretched over its length. Use a palette knife or a special carpet bolster to drive the carpet in behind the spiked strips, so that it hooks onto the strips when the tension being applied is released. After making a full check, cut the carpet and use the carpet bolster to work the carpet in between the spiked strip, wall or skirting. After the carpet has been stretched over the whole room, the edges are trimmed and pushed down into the gap between wall and carpet gripper. Use

strong profiled edging trims on areas where the carpet ends and a different floor surface begins. A profiled edging trim will help prevent damage and unravelled edges.

3.10 Removable installation

The purpose of this type of installation is to leave the subfloor intact after removing the floor covering. The difference with the glued down fitting is the type of adhesive used: a self adhesive membrane or an adhesive that does not produce a permanent bond, the so called 'release type adhesive'.

The preparation of the subfloor, especially cleaning and dusting, is essential for obtaining good results. During removal, the splitting has to occur between glue and carpet backing, and not between primary and secondary backing! In many cases, floor coverings with SBR-foam backing are not resistant to the ammonium substances in the release type adhesive, and should not be used in release systems.

3.11 Pattered 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.

3.11.1 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). Any pattern shift, however small, will have to be corrected when fitting. 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.

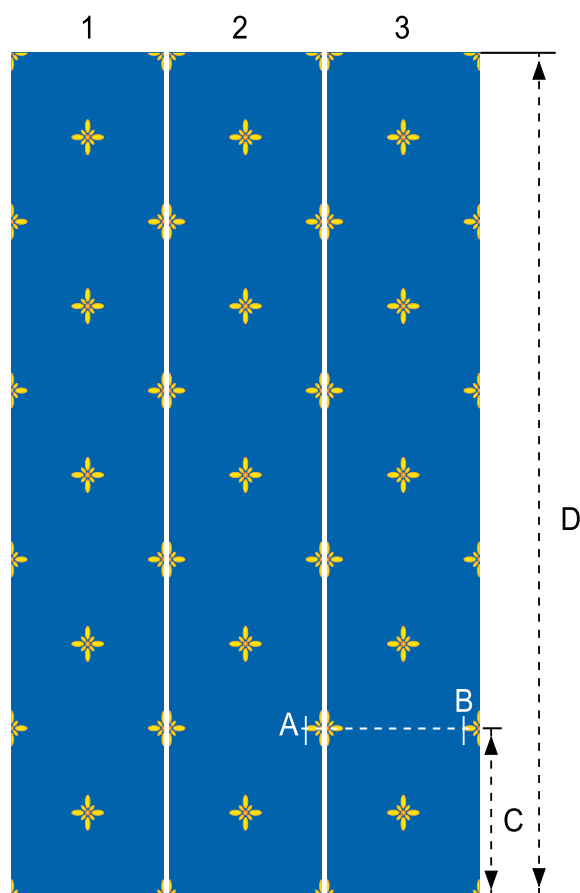
3.11.2 Pattern shift between pieces from the same production

A pattern shift may occur within one production. Pattern repeat length between ≥ 0 cm and < 10 cm maximum deviation 2% of the pattern repeat. Pattern repeat length between ≥ 10 cm and < 100 cm maximum deviation 1% of the pattern repeat. Pattern repeat length ≥ 100 cm as quoted by manufacturer.

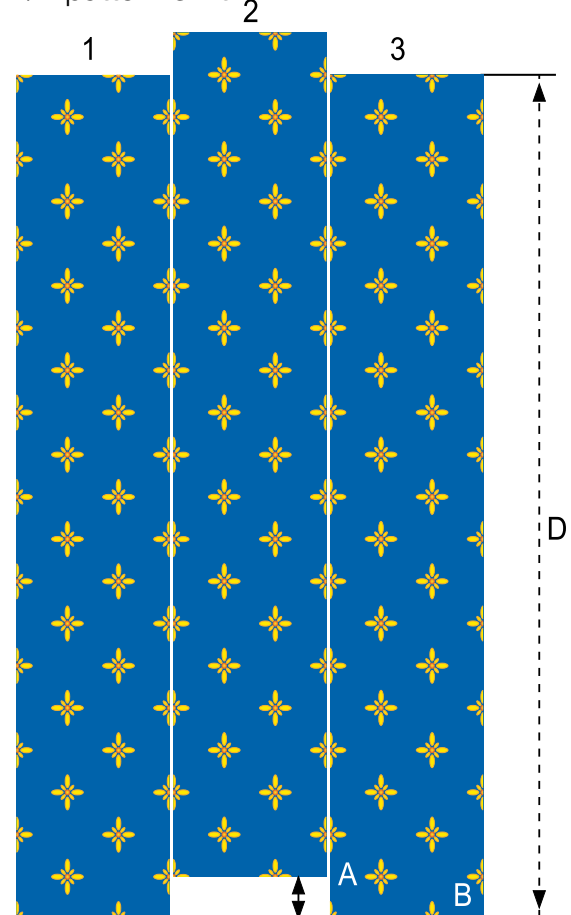
3.11.3 Bowing

Z-bowing is defined as the deviation from squareness. The edges of the strip sections do not

Pattern shift



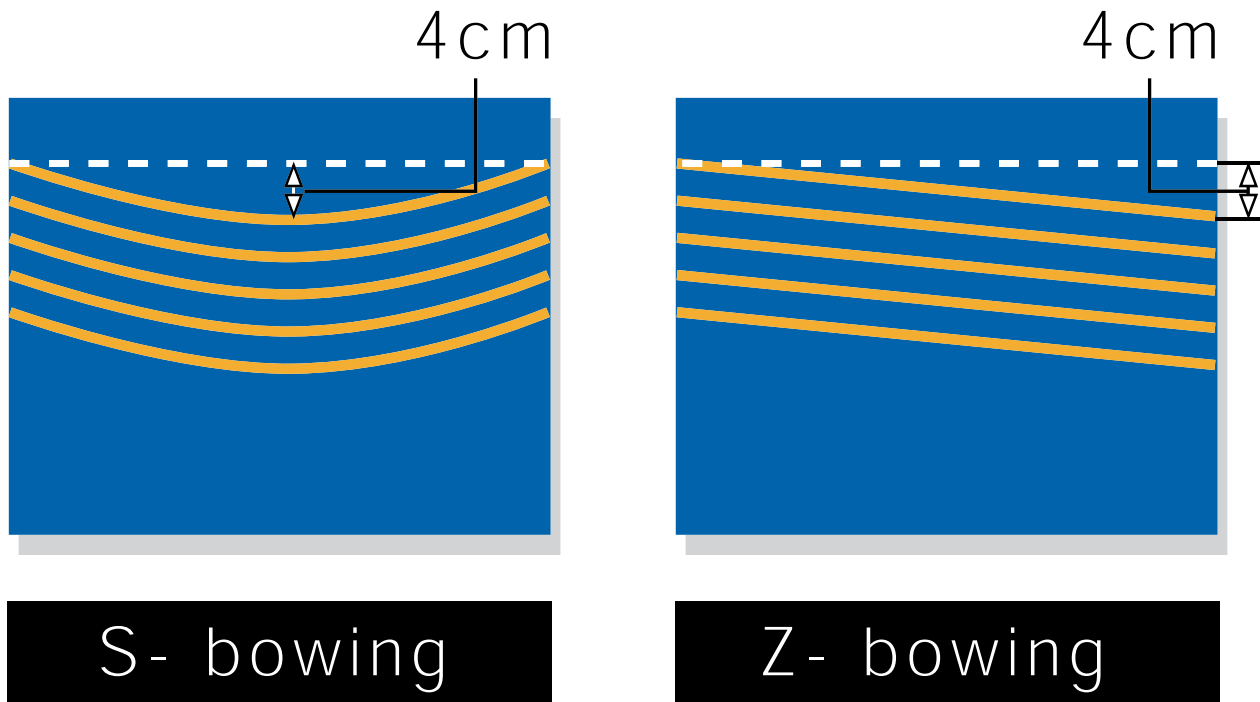
1/2 pattern shift



lie in one line. See drawing. In this case a maximum deviation of 4 cm is permitted. S-bowing is defined as the bowing in relation to a straight line on the strip section. A maximum deviation of 4 cm is also applicable in this case.

3.11.4 Measuring up

When multiple sections are being laid together extra metres will always be required when applying a carpet with a pattern, and the undersizes will be distributed over several rolls. Both the pattern repeat length and the pattern repeat width are of importance when calculating



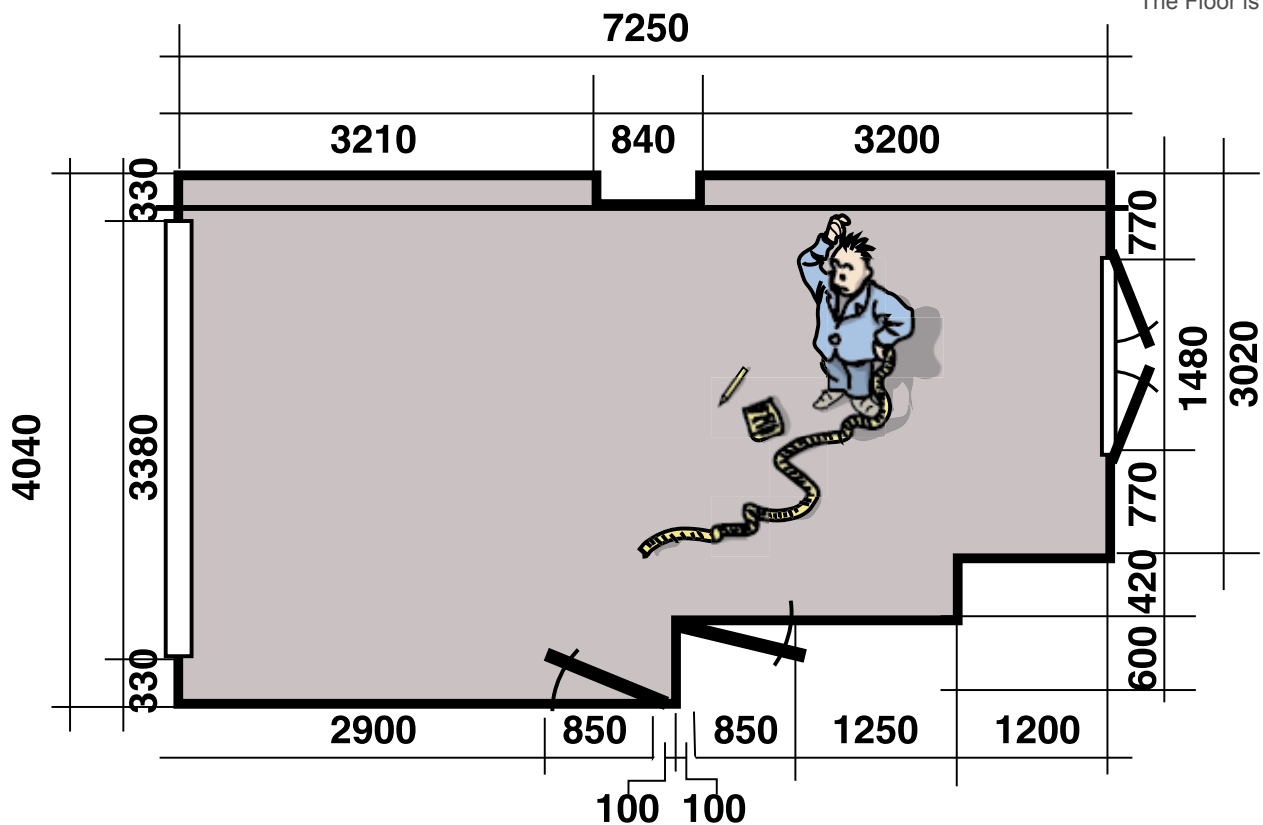
the number of metres required. Information regarding the pattern repeat length and width can be found in the product specifications. Consult the Desso Group or Desso Technical Services if necessary. As a general guideline it applies that: floor length + cutting losses (minimum 10 cm) + one extra repeat length = section length. This length should be stated when ordering. It is the responsibility of the carpet fitter to submit a correct section plan for patterned carpet that takes the above into account.

Note: In certain areas you should also take the repeat width into account for the correct quantity of carpet! In some cases an extra section length may be required.

3.11.5 Laying patterned contract carpets

Lay out the first section fully with an overlap on the skirting or other edges or obstacles. If a long or large repeat has been chosen you will have to take the distribution of the pattern at the beginning and at the end of the section in relation to the walls, doors, etc. into account. The second section can now be laid in such a manner that the seam pattern along the seams of both sections matches. When laying 'on the repeat' you have to begin at the centre and work to the left and to the right. Any pattern or repeat shift in woven carpet can be corrected with the knee stretcher and/or power stretcher. For adhering the carpet please refer to the paragraph 'Adhering', and for seams that do or do not require cutting please refer to the paragraph 'Cutting to size'.

Note: When fitting, first lay out all sections next to one another to ensure correct matching of the pattern. Any possible pattern shift or straightening in relation to walls etc. can then be easily corrected.



3.12 Wheelchair resistant adhering

The 'wheelchair resistant' qualities must of course also be adhered to the subfloor in an effective 'wheelchair resistant' - manner. A subfloor only qualifies as wheelchair resistant if it complies with a compression resistance of at least 250 kg per cm².

Note that for use on carpets a wheel chair always must be provided with wheels according certain specifications (see the Appendix with International Standards) i.e. 'hard' wheels (type H) with the mandatory measurements: diameter 50 mm and width 20 mm. 'Soft' wheels (type W) of existing chairs therefore have to be replaced.

For the fitting method and quantity of adhesive required please refer to the instructions supplied by the adhesive manufacturer. Always ensure that the notches on the adhesive spreader being used are in good condition!

3.13 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.

In short the following values are applicable:

- floor temperature
- max. 20°; min. 10 °C.

- room temperature
- max. 25°; min. 15 °C.

- relative humidity
- max. 75%; min. 55%.

After gluing the carpet, the underfloor heating temperature may not be raised for 48 hours. The heating temperature can then be gradually increased up to the normal operating temperature.

3.14 Adhering carpet with low electrical resistance values

In areas that accommodate mainframes and precision electronic equipment, stringent antistatic requirements are applicable. If Desso contract carpet with low electrical resistance values is being fitted it might be necessary to adhere the carpet using a conductive adhesive. In exceptional cases the application of a so-called 'copper band' is recommended. In consideration of the highly demanding conditions in computer centres and similar locations, Desso can also produce contract carpets with a reduced electrical resistance. Several Desso products possess this property as standard. Please refer to the product specifications for the various qualities or consult the Desso project group.

Note: On insulating floors we recommend fitting the subfloor with a conducting copper strip of $\pm 1,25$ m. per 40 m² or per room. This so-called 'copper band' should be well earthed. For further advice please consult the Technical Services Department at Desso.

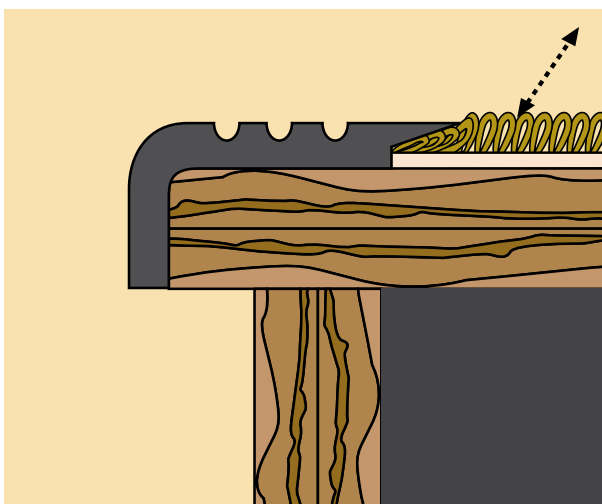
Fitting Desso carpet on stairs

4.1 General

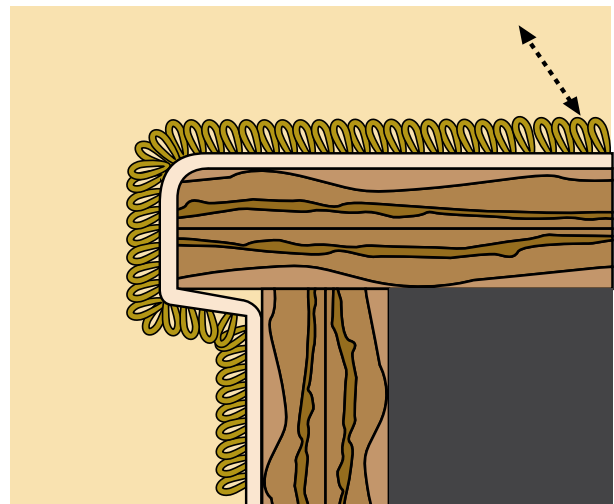
Fitting carpet to stairs can be divided into three methods of application, namely:

- Covering the stairs with carpet where the treads and the risers are completely covered in carpet and fully glued.
- Covering the stairs with carpet whereby nosing is fitted to the nose of the tread, and the tread and riser are fitted with carpet and fully glued.
- Fitting the stair carpet using the stretching method where the carpet is stretched over the tread and riser without a nosing section being used.

Before any of these methods can be applied it will be necessary to inspect and prepare the stairs following the instructions below. If the carpet is being fitted on stairs without tread nosing, with the tread and riser carpeting fitted without interruption, the rounding at the front or nosing of the tread should have a radius at least 2.5 cm. If a hollow angle is used in the corner between the tread and the riser, the hollow angle should also have a minimum radius of 2.5 cm. If tread nosing is present, the front of the tread should have the same shape as the inside of the nosing section. This is absolutely essential for ensuring a good connection and obtaining firm adhesion of the nosing section on the tread. If any space exists between the nosing section and the tread it is quite likely that cracks will form in the nosing section. The front of the nosing section should not be glued.



with tread nosing section



without tread nosing section

4.2 Carpet pile direction

The pile direction of the carpet should always face downwards if no nosing sections are being used. If nosing sections are used the nap or pile direction should face upwards in connection with the attachment of the carpet to the nosing section.

4.3 Old stairs with worn treads

Old stairs on which the treads are considerably worn should first be levelled. This can be achieved by placing a wooden strip across the front of the tread, or if the stairs are to be carpeted without nosing sections, by using a wooden dowel sawn through the middle lengthwise. Use can also be made of the repair strips specifically made for that purpose. Inspect any old coats of paint on the stairs and remove if necessary. If fitting PVC or rubber nosing sections the tread should be made completely free of paint. The neoprene adhesive with which the nosing section is glued will dissolve any old paint remaining, resulting in poor adhesion. Before gluing, old paint should be thoroughly degreased and sanded using coarse sandpaper.

4.4 New wooden stairs

These stairs are usually untreated and do not usually cause problems with adhesives. They should nevertheless be inspected and the rounding of the nosing corrected if necessary. The nosing rounding should have radius of ± 2.5 cm.

4.5 Old hard stone, tiled and concrete stairs

In case the stairs have old coats of wax and suchlike the stairs will require degreasing before proceeding. Any worn treads should be repaired using repair strips and then levelled. Sand if necessary.

4.6 New concrete stairs finished with a cement coating

Repair any existing damage using synthetic mortar, and repair any damage to the nosing of the treads in particular. Level and sand if necessary.

4.7 Adhering carpet on stairs

First cut the treads and risers to size with the aid of a stair spider. Allow an overlap of several centimetres on all sides. Take note of the pile direction. Both water based adhesive or neoprene adhesive can be used for adhering. The risk of blister formation is however greater when using water based adhesive. Neoprene adhesive is therefore preferable when gluing on both sides. Use a well notched adhesive spreader for applying the adhesive to the treads and risers, and follow the instructions supplied with the adhesive.

When using PVC or rubber nosing sections make sure that sufficient adhesive is applied to the lip of the section that is located underneath the carpet on the tread. If adhesive is being used it may be applied using either a fine-toothed spreader or a brush. Do not apply any more adhesive than you can work within the drying time of the adhesive. Work from downstairs up, and ensure that the carpet is well fixed to the nosing on each tread. Cut off the overlap on the tread and riser.

4.8 Carpeting stairs using the stretching method

Fit the spiked strips on the treads and risers. Note: 2/3 of the carpet thickness is the distance between the strip and the riser, tread or stringer. Place the strips along the stair stringer up to ± 2 cm from the nosing. Do not fit strips on the nosing. If the stairs are open on both sides use can be made of an aluminium compression section. Work from downstairs up. On concrete stairs cut the strips into lengths of ± 10 cm and adhere them using epoxy adhesive.

Once the strips have been fixed in position the underlay can be laid and glued into position using a little adhesive. After the carpet has been cut with a slight overlap, and care taken that the pile is laid upright on the nosing with the nap of the carpet going down the stairs, the carpet can be fitted, again working from downstairs up. Hook the carpet onto the spiked strips and work it up over the first tread to the second riser. Affix the carpet to the spiked strips with the aid of a carpet bolster. Make use of a knee kicker to stretch the carpet tightly over the tread and riser. Do not cut the overlap off completely, but drive it in behind the strip with the aid of the carpet bolster. Now finish the sides and follow the same method of working on the remaining treads and risers. The uppermost tread is finished using a special finishing strip. If the carpet is being fitted on a platform or landing, the top riser should also be included and the carpet affixed to it, or secure to the spike strips at the bottom of the top riser.

Fitting Desso carpet tiles

5.1 Preparatory work

Acclimatisation of tiles should take place in conditions as close as possible to those of the building when occupied. Therefore the tiles should be unpacked at least 24 hours prior to installation and allowed to acclimatise at room temperature. The tiles should be installed at a minimum room temperature of 15 °C with a maximum relative humidity of 75%. A floor temperature of at least 10 °C should be maintained. If it is not possible to unpack the tiles fully, open the carton sides to allow air circulation and stack them to a maximum of 8 to 10 boxes high.

5.2 The subfloor

Carpet tiles can be installed on any floor that is smooth, dry, pressure-resistant, clean and protected from damp. Any remnants of previous carpet, felt or underlay must be removed as should any adhesive, dust, grease or polish. Any holes or indentations, joins, cracks or uneven floor areas should be levelled with a good floor filler. Follow the instructions of the manufacturer.

5.2.1 Concrete floors

New concrete must be dry when tested with CM-meter or protimeter: the CM-value may not exceed 3% and the protimeter-value may not exceed 5%. The relative humidity in the room may not be higher than 75%.

5.2.2 Anhydrite floors

The relative humidity in the room may not be more than 75%. Anhydrite floors must be dry. Tested with a CM-meter the value should be no more than 1% and tested with the protimeter the value may not exceed 2%.

5.2.3 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 (6") centres, i.e. 15 cm (6") 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 (9") centres, i.e. ± 23 cm (9") apart. The same goes for chipboard and MDF.

5.2.4 Dusty floors

Dusty surfaces should receive a sealer treatment with a primer and this must be allowed to dry before the application of the recommended tackifier system.

5.2.5 Others floors

Vanished and polished surfaces should be degreased and then roughened by light sanding.

Note: For floors not mentioned refer to the relevant paragraphs in the section Preparing the subfloors for Desso Contract carpet.

5.3 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% anti-slip
- Make sure the anti-slip is well dried before installing the tiles
- When using tape, apply the tape diagonal to the walking direction. If possible, every 2nd row, according to the kind of use and the demands made.
- On computer floors always use conducting anti-slip, so the static electrical personcharge 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.

5.4 Recommendation

Carpet tiles do not require the use of a permanent bond adhesive, gripper or underlay. We recommend the use of an approved tackifier system or anti-slip (which is applied to the whole of the surface area, especially underneath all seams; see the illustration.) Once the tackifier has been allowed to dry the carpet tiles can be placed in position with a hand or knee stretcher. Small areas and individual offices less than 20 m² can be laid with the use of double sided tape underneath all the seams. Consult Desso Technical Services about this. Particular attention should be paid to cut tiles forming the perimeter of the area and also to doorways where partial tiles may also feature.

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

5.5 Guarantee

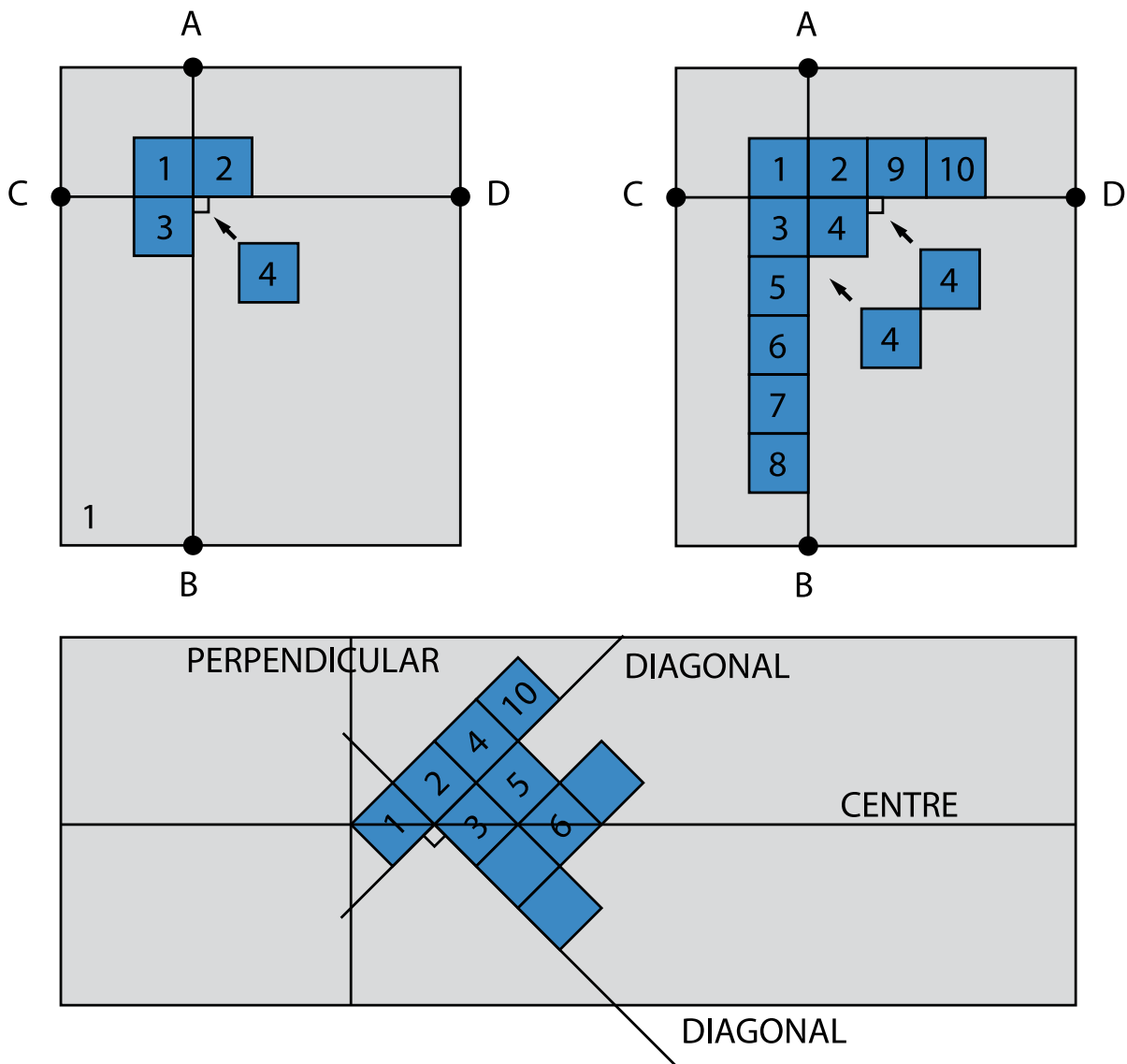
The installer should notify the manufacturer of any defective material before proceeding with the installation. The manufacturer will be responsible, within the scope of the product guarantees for any defective materials. This refers to material defects identified prior to or during the installation. Desso will not be responsible for poor workmanship or problems due to improper installation (see the Appendix with Terms and Conditions).

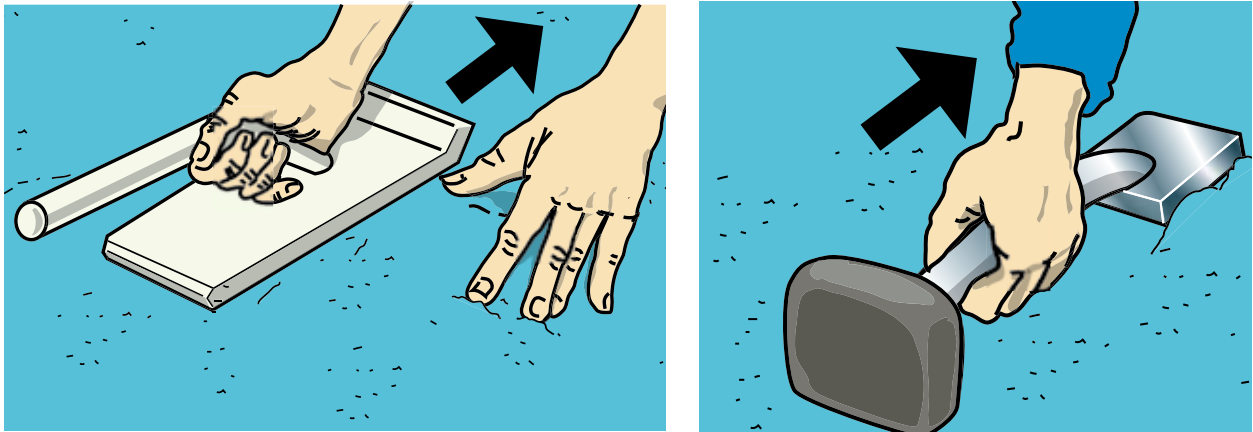
5.6 Protection during and after installation

Until the area being tiled is completed with all perimeter tiles adhered in position, there should be no walking on, or movement of heavy furniture over the partly completed installation. Once the installation has been completed the surface should be protected particularly if the area is to be used by other trades during final finishing. If heavy use is anticipated prior to occupation, the area should be protected with hardboard suitably taped at the joins and also a flexible sheet material which will prevent the ingress of dust.

5.7 Laying Desso carpet tiles

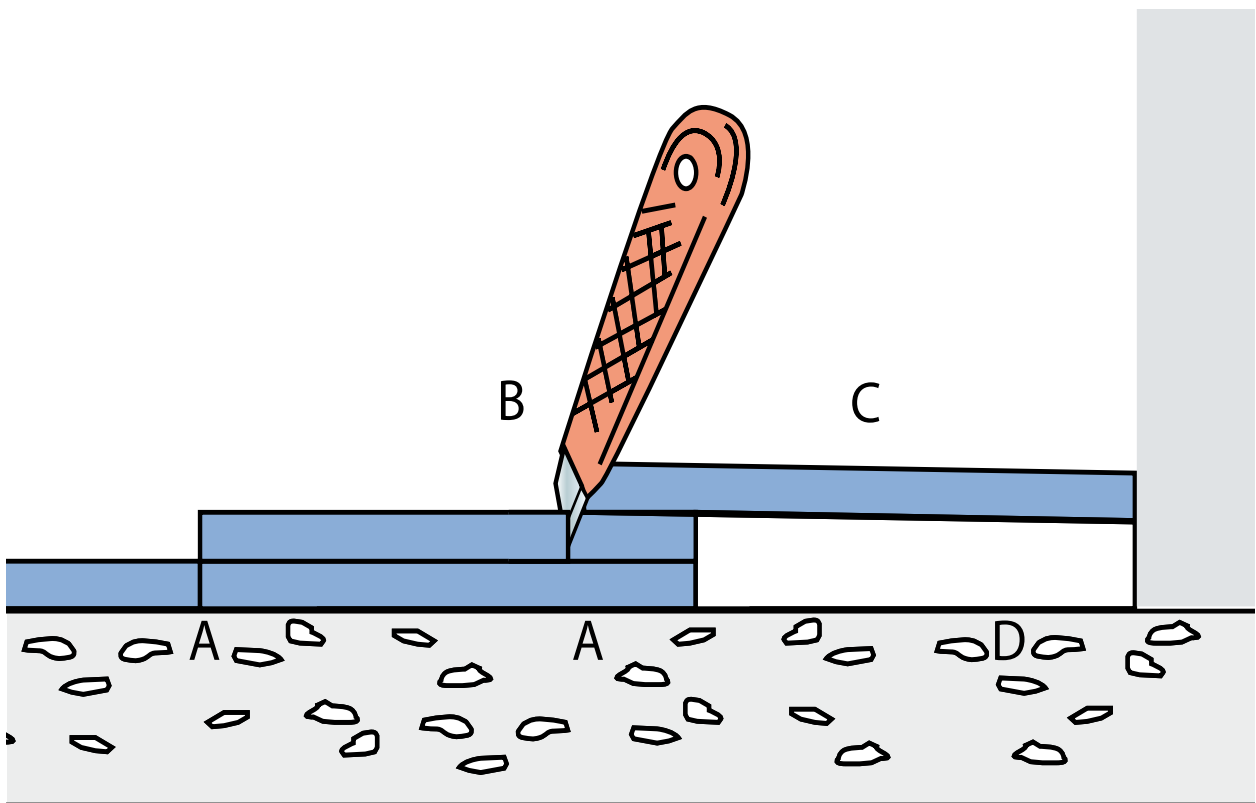
Never start installing carpet tiles against a wall. Always start from a calculated point in the room along a perpendicular line or chalk line. In offices start with the corridor and install the rooms afterwards, in order to obtain a good connection. Apply a recommended tackifier to an area convenient in size and once the tackifier 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 underbackings are closely together to limit the appearance of joints to a minimum. 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.





5.7.1 Cutting to skirting boards

To ensure a good fit to skirting boards cut the tile using the methods shown in the diagram, and place the cut edge against the skirting board. When calculating the starting point, check to ensure that tiles can be installed without the need for narrow cuts, minimum 10 cm. It may therefore be necessary to adjust the starting point.



5.7.2 Effects

The majority of carpet tiles may be installed to give four different appearances as shown in the diagram; arrows on the back of the tiles indicate lengthwise. On the samplecards and on the tile boxes you find the useable possibility for each type of tile.

5.7.2.1 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 tiels with a short (loop) pile and needle felt or fyber bonded tiles. This type of installation should not be used with cut pile products.

5.7.2.2 Monolithic appearance

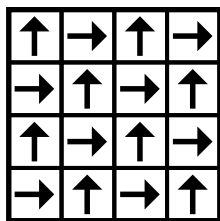
Tiles should be installed with the arrows on each tile pointing in the same direction. This type of installation is necessary for most cut and loop pile tiles and for printed qualities. Install the tiles as much as possible traverse to the light or with the arrows in the traffic direction of the room.

5.7.2.3 Brick wise appearance

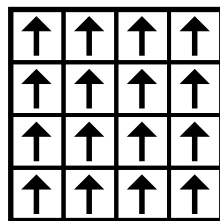
Tiles should be installed with the arrows on each tile pointing in the same direction, but started at the half of the width of the adjacent tile. This type of installation may be necessary for carpet tiles with a structural design

5.7.2.4 Ashlar appearance

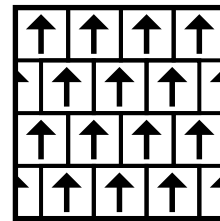
Tiles should be installed with the arrows on each tile pointing in the same direction, but started at the half of the length of the adjacent tile. This type of installation may be necessary for some loop pile carpet tiles.



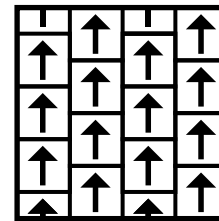
checkerboard



monolithic



brick



ashlar

5.7.3 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 tackifier. The tackifier should be applied with a roller and care should be taken to ensure that the tackifier stops before the edge of the raised panels. This enables panels to be lifted freely as and when the need arises.

5.7.4 Underfloor heating

Carpet tiles can be installed on floors with underfloor heating, providing the floor surface temperature does not exceed 28 °C. The heating should be reduced at least 48 hours prior to installation. Only 48 hours after installation the heating system slowly may be turned up to the maximum of 28 °C.

5.7.5 Castor chairs

In areas where office furniture has castor wheels it is imperative that the tiles are installed on an all over tackifier system. 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.

5.7.6 Stairs

Carpet tiles are suitable for installation on stairs, if fitted with nosings. The tiles and sections of tiles must be secured with a tackifier system on the treads. The risers can be secured with

either a single coat of tackifier 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.

5.7.7 Skirting board

When carpet tiles are used in the vertical plane as a skirting board, the application may need to be approved by a local fire officer.

Needle felt (patterned) carpet

6.1 Influential factors of contract environment

The properties of needle felt carpets are - like with any other textile floor covering influenced by factors of the environment, such as temperature and humidity. These have to be taken into account during the installation process. Before the installation the needle felt carpet has to be stored in a dry and warm room. It is recommended to let the carpet acclimatize in the room at least 1 hour, but preferably 24 hours.

6.2 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, like for instance PVC, have to be made a little bit absorbing according to the applicable norms (see the appendix). 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.

6.3 Cutting

Cutting of needle felt carpets should take place before adhering. The carpet has to be rolled out with an overlap of 3 to 5 cm. Next one has to cut the seams in one movement along a steel ruler with a sharp 'hooked' knife.

Note: Laying the original edges of the carpet against one another is not a professional installation method!

6.4 Special requirements with patterned needle felt

It is inherent to patterned needle felt qualities that there is a chance of line marking on the seams. This is dependent of the design and the colour. For optimum results the following is absolutely necessary:

- dense, absolutely straight seams
- usage of seam clasps or a kicker with double head until the glue has dried
- environmental conditions should be as specified in the norm VOB DIN 18365 (see the Appendix with international norms)
- Butt joining for an optimized over-all floor appearance.

6.5 Adhering

The temperature of the subfloor is not allowed to drop below 15 °C, while the relative humidity may not be more than 75% (50 to 60% RH is ideal). The carpet should be adhered preferably with a fast drying and hardening dispersion glue, using a notched adhesive spreader with a notch depth of 2.7 mm and a tooth width of 2.9 mm. When all is cut and tightly fitting and the seams have been completely closed by use of seam clips, the whole floor should be thoroughly rolled with a roller after about 20 minutes, depending on the instructions of the tackifier manufacturer

Note: Thoroughly rolling the seams is especially of the utmost importance!