

TDS – TECHNICAL DATA SHEET

HIMACS MARMO & AURORA COLLECTION

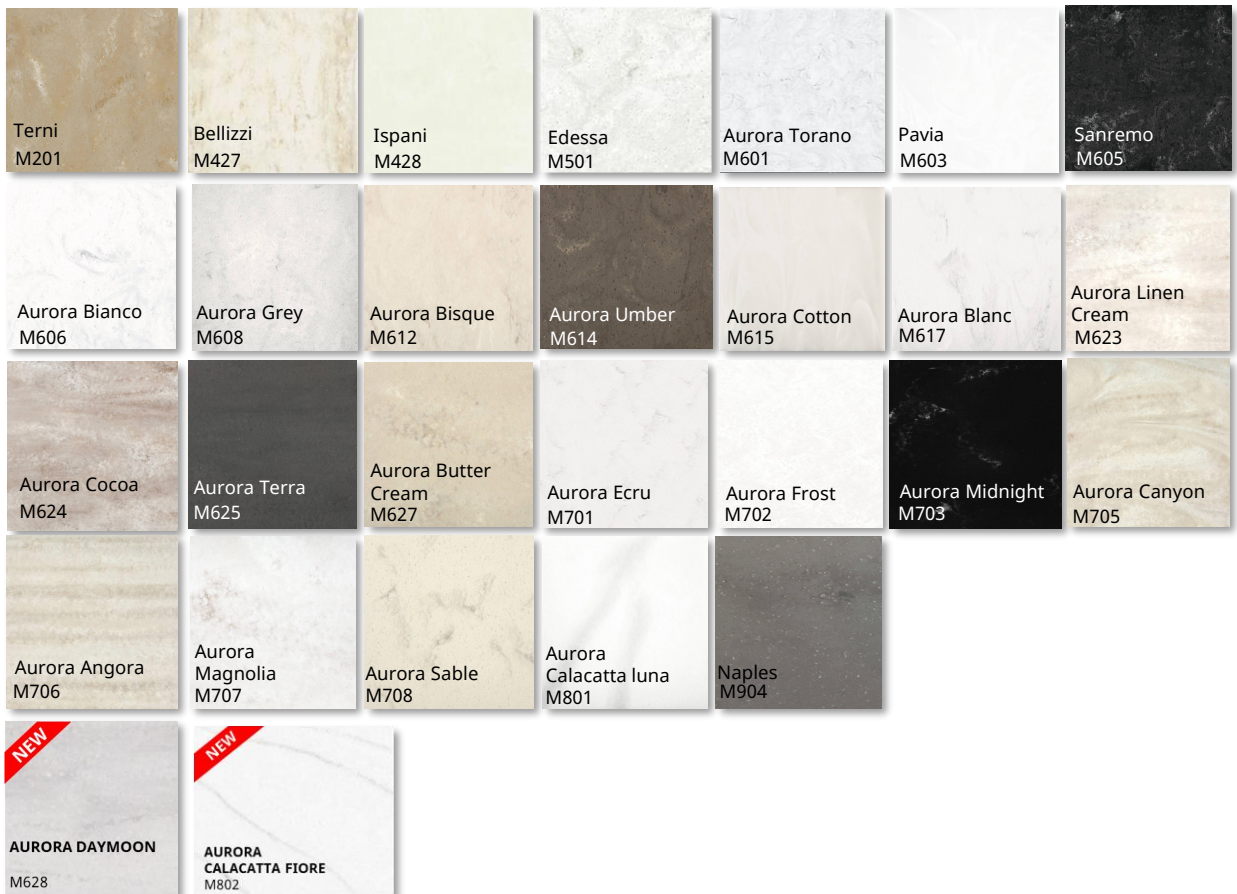


Colours belonging to the Mamo collection exhibit a greater variation in colour, shading, and pattern than is apparent in small size samples. Even A4-size samples and full-sheet photographic images can't fully capture these variations. If possible, allow the customer to view the actual material together with seaming layout examples and have the customer sign a "declaration of understanding" to help assure that the finished countertop is consistent with customer expectations.

When fabricating Marmo colours it's important to use consecutive sheets whenever there will be a field seam or a seam creating a "U"- or "L"-shaped countertop. Even with consecutive sheets it's important to visually verify alignments before beginning fabrication. In some cases, rotating one sheet 180-degrees may deliver the desired consistent or uniform alignment. In other cases, it may be necessary to sacrifice some material to join areas that are similar. Either approach can not only deliver a more pleasing appearance but will minimise the visibility of seams and joints.

1. Product Specifications

1.1. Available colours



1.1. Available colours



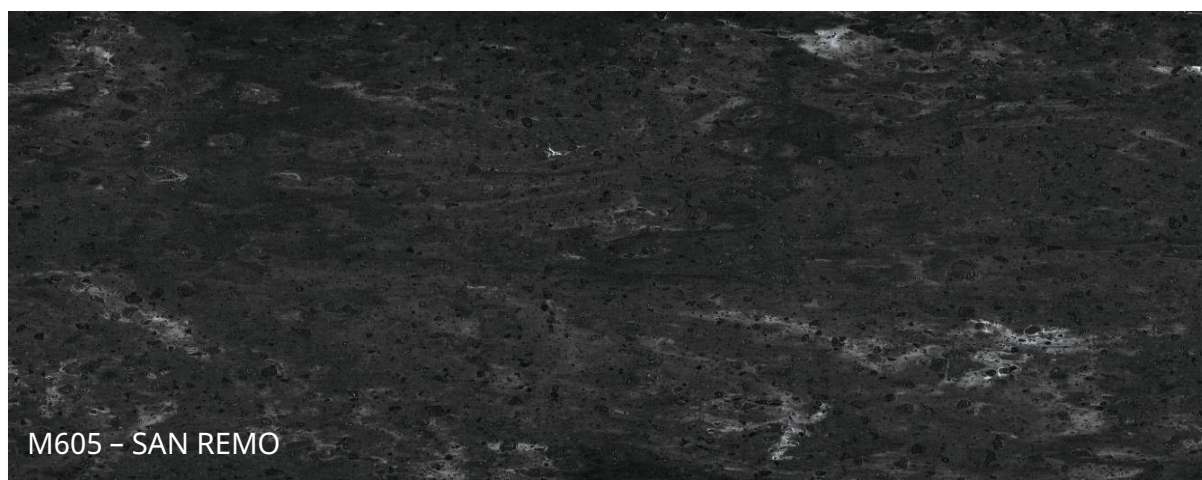
M426 - LAVIANO



1.1. Available colours



M603 - PAVIA

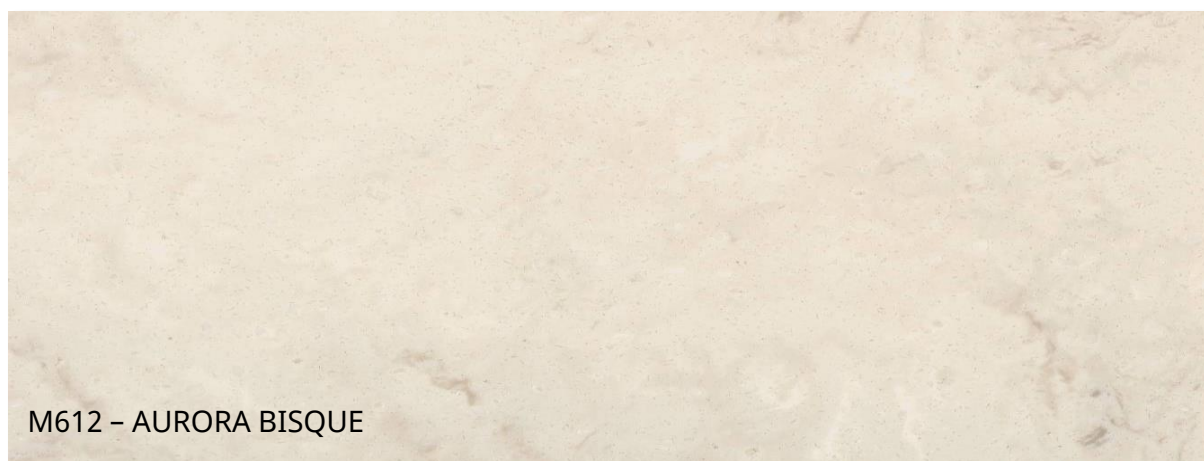


M605 - SAN REMO

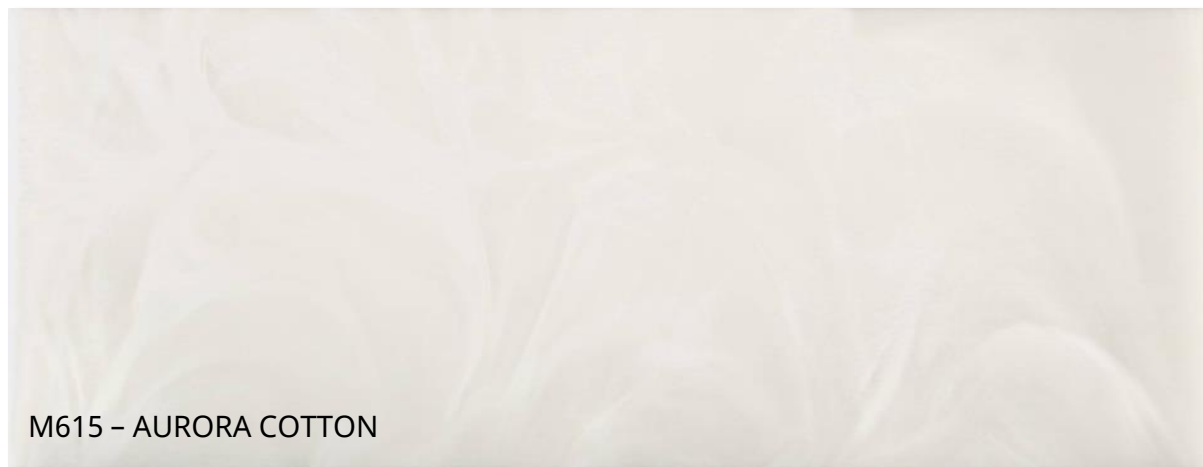


M606 - AURORA BIANCO

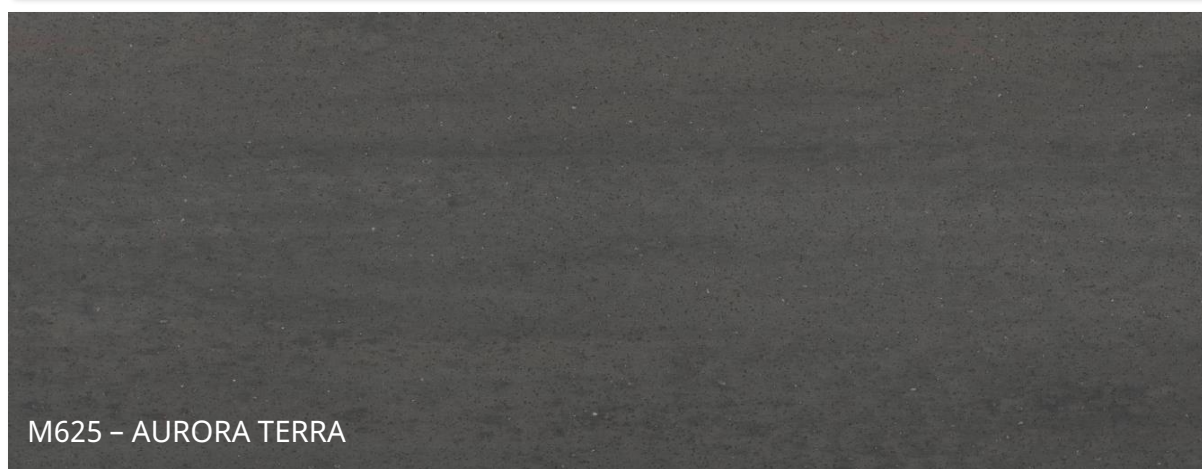
1.1. Available colours



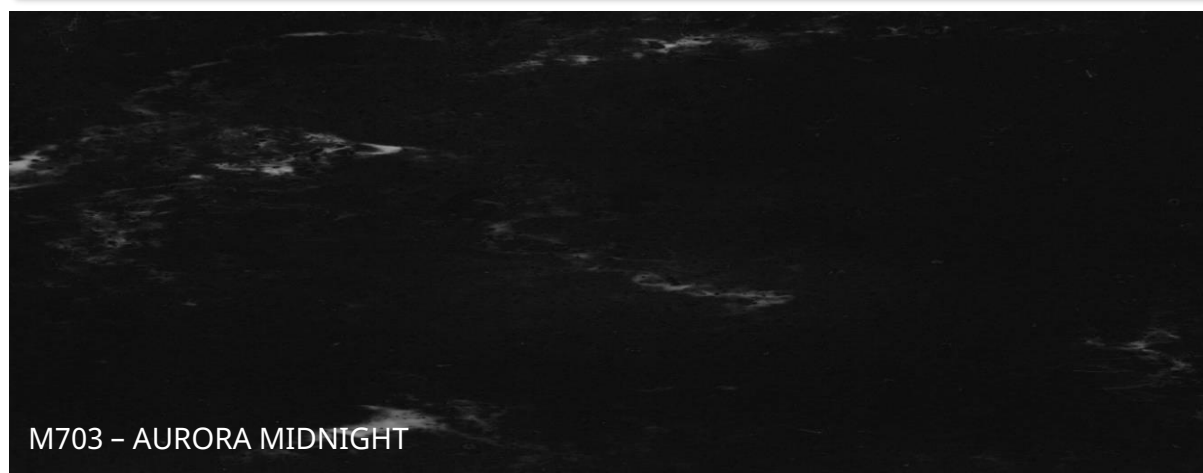
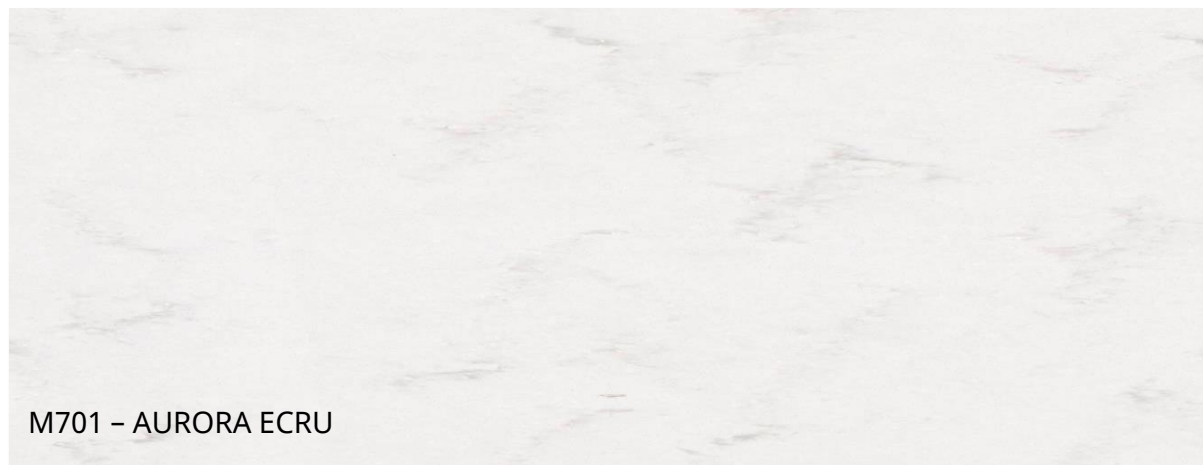
1.1. Available colours



1.1. Available colours



1.1. Available colours



1.1. Available colours



1.1. Available colours



1.2. New colours 2023



2. Sheet Specifications

| GROUP | COLOUR CODE | COLOUR NAME | SHEET THICKNESS | SHEET SIZE (Width x Length) | m ² PER SHEET | WEIGHT PER SHEET | WEIGHT PER m ² | SHEETS PER PALLET |
|----------------|-----------------------|------------------------|-----------------|-----------------------------|--------------------------|------------------|---------------------------|-------------------|
| MARMO | M201 | TERNI | 12 mm | 760mm x 3680mm | 2,7968 | 55,38 kg | 19,80 kg | 15 |
| | M427 | BELLIZZI | 12 mm | 760mm x 3680mm | 2,7968 | 55,38 kg | 19,80 kg | 15 |
| | M428 | ISPANI | 12 mm | 760mm x 3680mm | 2,7968 | 55,38 kg | 19,80 kg | 15 |
| | M501 | EDESSA | 12 mm | 760mm x 3680mm | 2,7968 | 55,38 kg | 19,80 kg | 15 |
| | M601 | AURORA TORANO | 12 mm | 760mm x 3680mm | 2,7968 | 55,38 kg | 19,80 kg | 15 |
| | M603 | PAVIA | 12 mm | 760mm x 3680mm | 2,7968 | 55,38 kg | 19,80 kg | 15 |
| | M605 | SAN REMO | 12 mm | 760mm x 3680mm | 2,7968 | 55,38 kg | 19,80 kg | 15 |
| | M606 | AURORA BIANCO | 12 mm | 760mm x 3680mm | 2,7968 | 55,38 kg | 19,80 kg | 15 |
| | M608 | AURORA GREY | 12 mm | 760mm x 3680mm | 2,7968 | 55,38 kg | 19,80 kg | 15 |
| | M612 | AURORA BISQUE | 12 mm | 760mm x 3680mm | 2,7968 | 55,38 kg | 19,80 kg | 15 |
| | M614 | AURORA UMBER | 12 mm | 760mm x 3680mm | 2,7968 | 55,38 kg | 19,80 kg | 15 |
| | M615 | AURORA COTTON | 12 mm | 760mm x 3680mm | 2,7968 | 55,38 kg | 19,80 kg | 15 |
| | M617 | AURORA BLANC | 12 mm | 760mm x 3680mm | 2,7968 | 55,38 kg | 19,80 kg | 15 |
| | M623 | AURORA LINEN CREAM | 12 mm | 760mm x 3680mm | 2,7968 | 55,38 kg | 19,80 kg | 15 |
| | M624 | AURORA COCOA | 12 mm | 760mm x 3680mm | 2,7968 | 55,38 kg | 19,80 kg | 15 |
| | M625 | AURORA TERRA | 12 mm | 760mm x 3680mm | 2,7968 | 55,38 kg | 19,80 kg | 15 |
| | M627 | AURORA BUTTER CREAM | 12 mm | 760mm x 3680mm | 2,7968 | 55,38 kg | 19,80 kg | 15 |
| | M701 | AURORA ECRU | 12 mm | 760mm x 3680mm | 2,7968 | 55,38 kg | 19,80 kg | 15 |
| | M702 | AURORA FROST | 12 mm | 760mm x 3680mm | 2,7968 | 55,38 kg | 19,80 kg | 15 |
| | M703 | AURORA MIDNIGHT | 12 mm | 760mm x 3680mm | 2,7968 | 55,38 kg | 19,80 kg | 15 |
| | M705 | AURORA CANYON | 12 mm | 760mm x 3680mm | 2,7968 | 55,38 kg | 19,80 kg | 15 |
| | M706 | AURORA ANGORA | 12 mm | 760mm x 3680mm | 2,7968 | 55,38 kg | 19,80 kg | 15 |
| | M707 | AURORA MAGNOLIA | 12 mm | 760mm x 3680mm | 2,7968 | 55,38 kg | 19,80 kg | 15 |
| M708 | AURORA SABLE | 12 mm | 760mm x 3680mm | 2,7968 | 55,38 kg | 19,80 kg | 15 | |
| M801 | AURORA CALACATTA LUNA | 12 mm | 760mm x 3680mm | 2,7968 | 55,38 kg | 19,80 kg | 15 | |
| M904 | NAPLES | 12 mm | 760mm x 3680mm | 2,7968 | 55,38 kg | 19,80 kg | 15 | |
| NEW MARMO 2023 | M628 | AURORA DAYMOON | 12 mm | 760mm x 3680mm | 2,7968 | 55,38 kg | 19,80 kg | 15 |
| | M802 | AURORA CALACATTA FIORE | 12 mm | 760mm x 3680mm | 2,7968 | 55,38 kg | 19,80 kg | 15 |

3. Sheet & Matching adhesives

| SHEET | | | ADHESIVE | | |
|----------------------|-----------------------|------------------------|-------------|---------------|----------------|
| GROUP | COLOUR CODE | COLOUR NAME | COLOUR CODE | COLOUR NAME | PACKAGING UNIT |
| MARMO | M20 1 | TERNI | H68 | TERNI | 45ml / 250ml |
| | M426 | LAVIANO | H03 | GREY | 45ml / 250ml |
| | M427 | BELLIZZI | H36 | SILVER | 45ml / 250ml |
| | M428 | ISPANI | H36 | SILVER | 45ml / 250ml |
| | M50 1 | EDESSA | H02 | ARTIC WHITE | 45ml / 250ml |
| | M60 1 | AURORA TORANO | H02 | ARTIC WHITE | 45ml / 250ml |
| | M60 3 | PAVIA | H21 | PAVIA WHITE | 45ml / 250ml |
| | M60 5 | SAN REMO | H35 | DARK | 45ml / 250ml |
| | M60 6 | AURORA BIANCO | H02 | ARTIC WHITE | 45ml / 250ml |
| | M60 8 | AURORA GREY | H139 | AURORA GREY | 45ml / 250ml |
| | M6 12 | AURORA BISQUE | H141 | AURORA BISQUE | 45ml / 250ml |
| | M6 14 | AURORA UMBER | H143 | AURORA UMBER | 45ml / 250ml |
| | M6 15 | AURORA COTTON | H144 | AURORA COTTON | 45ml / 250ml |
| | M6 17 | AURORA BLANC | H146 | AURORA BLANC | 45ml / 250ml |
| | M623 | AURORA LINEN CREAM | H140 | AURORA ASH | 45ml / 250ml |
| | M624 | AURORA COCOA | H126 | BEIGE | 45ml / 250ml |
| | M625 | AURORA TERRA | H39 | LATTE | 45ml / 250ml |
| | M627 | AURORA BUTTER CREAM | H52 | BABYLON BEIGE | 45ml / 250ml |
| | M70 1 | AURORA ECRU | H139 | AURORA GREY | 45ml / 250ml |
| | M70 2 | AURORA FROST | H144 | AURORA COTTON | 45ml / 250ml |
| | M70 3 | AURORA MIDNIGHT | H07 | BLACK | 45ml / 250ml |
| | M70 5 | AURORA CANYON | H44 | MIKENO | 45ml / 250ml |
| | M70 6 | AURORA ANGORA | H44 | MIKENO | 45ml / 250ml |
| | M70 7 | AURORA MAGNOLIA | H001 | SATIN WHITE | 45ml / 250ml |
| M70 8 | AURORA SABLE | H20 | SABLE | 45ml / 250ml | |
| M80 1 | AURORA CALACATTA LUNA | H02 | ARTIC WHITE | 45ml / 250ml | |
| M90 4 | NAPLES | H107 | MARTA GREY | 45ml / 250ml | |
| NEW MARMO 2023 | M628 | AURORA DAYMOON | H001 | SATIN WHITE | 45ml / 250ml |
| | M802 | AURORA CALACATTA FIORE | H140 | AURORA ASH | 45ml / 250ml |

4. LRV Light Reflectance Values & Colour codes (Pantone – RAL Classic – NCS)

| GROUP | COLOUR CODE | COLOUR NAME | LRV | PANTONE | RAL Classic | NCS |
|-------|-------------|---------------------|-------|--|---|---|
| MARMO | M201 | TERNI | 33,18 | 16-1212 TPG | ≈ RAL 10 0 1 ▲ ≈ RAL 10 11 | S 30 10 -Y30 R S 0500 -N |
| | M426 | LAVIANO | 45,14 | 14-4107 TPG | RAL 70 47 RAL 70 04 ○ RAL 70 30 | S 2500 -N S 0300 -N S 6000 -N S 2002 -Y20 R |
| | M427 | BELLIZZI | 8,37 | 11-10 0 1 TPG | RAL 90 0 1 RAL 90 16 △ | S 10 02 -Y50 R S 0500 -N S 1505 -Y20 R |
| | M428 | ISPANI | 89,56 | 11-060 1 TPG | RAL 90 0 3 | S 0500 -N |
| | M50 1 | EDESSA | 75,75 | 11-480 0 TPG 16-380 2 TPG | RAL 90 0 3 RAL 70 47 △ | S 0500 -N S 1000 -N S 3000 -N |
| | M60 1 | AURORA TORANO | 71,82 | 11-480 0 TPG 16-00 0 0 TPG | RAL 90 0 3 RAL 70 44 ○ RAL 80 19 | S 0500 -N S 3502 -R ○ |
| | M60 3 | PAVIA | 77,22 | 11-060 1 TPX 11-480 0 TPX | RAL 90 0 3 ○ | |
| | M60 5 | SAN REMO | 8,49 | 19-40 0 6 TPX 19-00 0 0 TPX | RAL 80 19 RAL 90 0 5 RAL 90 10 ○ RAL 80 17 | |
| | M60 6 | AURORA BIANCO | 78,35 | 11-060 1 TPX 13-440 3 TPX | RAL 90 0 3 RAL 70 45 ○ RAL 90 0 2 | |
| | M60 8 | AURORA GREY | 58,52 | 13-440 3 TPX 12-040 4 TPX | RAL 70 47 △ | |
| | M61 2 | AURORA BISQUE | 53,48 | 12-520 2 TPG 12-430 1 TPG ○ 16-1210 TPG | RAL 085 85 10 △ RAL 080 80 10 ○ RAL 070 70 10 | S 10 05 -Y30 R S 1505 -Y30 R ○ S 30 10 -Y60 R |
| | M61 4 | AURORA UMBER | 13,03 | 19-080 8 TPG 13-00 0 0 TPG ○ 19-390 1 TPG | RAL 70 39 △ RAL 70 44 ○ RAL 80 19 △ | S 7005 -Y50 B S 1502 -Y50 R ○ S 7005 -R50 B |
| | M61 5 | AURORA COTTON | 73,51 | 11-420 2 TPG ○ 11-40 0 1 TPG 11-430 1 TPG | RAL 90 0 3 △ | S 0500 -N ○ S 0300 -N △ S 1002 -Y |
| | M61 7 | AURORA BLANC | 77,12 | 11-480 0 TPG 11-060 1 TPG ○ 16-470 3 TPG | RAL 90 0 3 RAL 70 47 ○ RAL 70 42 | S 0500 -N ○ S 0300 -N △ S 4000 -N ○ |
| | M62 3 | AURORA LINEN CREAM | 62,39 | 12-030 4 TPG ○ 13-090 5 TPG ○ 11-060 8 TPG ○ 14-120 8 TPG ○ | RAL 90 0 1 ○ RAL 10 13 △ RAL 10 11 △ | S 1005 -Y20 R ○ S 2005 -Y40 R △ S 3020 -Y30 R △ S 0500 -N △ |
| | M62 4 | AURORA COCOA | 40,71 | 15-130 9 TPG ○ 16-1320 TPG ○ 16-1310 TPG ○ 11-40 0 1 TPG ○ | RAL 80 25 ▲ RAL 80 25 △ RAL 90 0 3 ○ | S 30 10 -Y30 R S |
| | M62 5 | AURORA TERRA | 8,74 | 19-08 12 TPG ○ 19-08 10 TPG ○ 19-050 8 TPG ○ | RAL 80 19 ○ RAL 90 0 4 ○ RAL 80 28 △ | S 8000 ○ S 8000 -Y50 R ○ S 8500 -N ○ |
| | M62 7 | AURORA BUTTER CREAM | 38,06 | 15-130 8 TPG ○ 13-530 4 TPG ○ 17-1210 TPG ○ 11-10 0 1 TPG ○ | RAL 10 19 △ RAL 90 0 1 ○ RAL 80 25 ▲ | S 3005 -Y20 R △ S 2005 -Y20 R ○ S 50 10 -Y30 R △ S 1002 -Y ○ |

4. LRV Light Reflectance Values & Colour codes (Pantone – RAL Classic – NCS)

| GROUP | COLOUR CODE | COLOUR NAME | LRV | PANTONE | RAL Classic | NCS |
|----------------|-------------|------------------------|-------|--|--|---|
| | M701 | AURORA ECRU | 68,16 | 12-4302 TPG ○ 17-1210 TPG ○ 15-0000 TPG △ | RAL 9002 △ RAL 7044 △ RAL 7006 △ | S1000-N △ S2502-Y ○ S2502-Y ○ |
| | M702 | AURORA FROST | 75,21 | 12-4302 TPG ○ 11-4001 TPG ○ 15-0000 TPG △ | RAL 9002 ▲ RAL 9003 ○ RAL 7044 ▲ | S1000-N △ S1502-Y ○ |
| | M703 | AURORA MIDNIGHT | 6,78 | 19-4004 TPG ○ | RAL 9001 ○ | S9000-N ○ |
| | M705 | AURORA CANYON | 58,47 | 12-5202 TPG ○ 15-1218 TPG ○ 16-1212 TPG △ 11-4001 TPG ○ | RAL 9001 ○ RAL 1015 △ RAL 1011 △ RAL 9003 ○ | S1005-Y20R ○ S2005-Y20R △ S3020-Y20R ○ S0500-N ○ |
| | M706 | AURORA ANGORA | 57,08 | 12-5202 TPG ○ 15-1218 TPG ○ 16-1212 TPG △ 11-4001 TPG ○ | RAL 9001 ○ RAL 1015 △ RAL 1011 △ RAL 9003 ○ | S1005-Y20R ○ S2005-Y20R △ S3020-Y20R ○ S0500-N ○ |
| MARMO | M707 | AURORA MAGNOLIA | 65,92 | 12-4302 TPG ○ 14-1208 TPG ○ 13-0907 TPG △ 14-0002 TPG ○ | RAL 9003 ▲ RAL 1019 △ RAL 1011 △ RAL 7047 △ | S1002-Y △ S3010-Y30R ○ S2502- △ |
| | M708 | AURORA SABLE | 56,43 | 13-0905 TPG ○ 17-1105 TPG ○ 13-0607 TPG △ | RAL 1013 △ RAL 1019 △ RAL 7006 △ | S1005-Y20R △ S1002-Y △ S2005- ○ S5005-Y20R ○ |
| | M801 | AURORA CALACATTA LUNA | 81,89 | 11-0601 TPG ○ 12-4302 TPG △ | RAL 9003 ○ RAL 9002 ○ RAL 7044 △ | S0502-G ○ S1002-Y ○ S1502-Y △ |
| | M904 | NAPLES | 20,22 | 17-1500 TPG | | S5502-Y |
| NEW MARMO 2023 | M628 | AURORA DAYMOON | 60,45 | 11-4301 TPG ○ 15-0000 TPG ○ 16-5803 TPG ○ | RAL 7047 ○ RAL 7004 △ RAL 7030 △ | S1000-N ○ S3000-N △ S3500-N △ |
| | M802 | AURORA CALACATTA FIORE | 77,34 | 11-4202 TPG ○ 14-4107 TPG ○ | RAL 9003 △ RAL 7047 △ | S0502-B △ S2500-N △ |

○ Most similar △ Somewhat similar ▲ Least similar

Note:

LRV and colour code, such as Pantone, RAL or NCS are only meaningful values for solid colors. The values provided by other colours are for references only.

5. Light Transmittance Value

According to test method
ASTM D1003

*Measuring Device:
NDH-5000 Hazemeter



| | M603 PAVIA 12 MM | S028 ALPINE WHITE 12 MM | S028 ALPINE WHITE 6 MM | S006 ARCTIC WHITE 12 MM | S006 ARCTIC WHITE 6 MM | S302 OPAL LUCENT 12MM | S009 SOLID CREAM 12MM | S005 SOLID GREY 12MM |
|----------------------------|------------------------|-------------------------------|------------------------------|-------------------------------|------------------------------|-----------------------------|-----------------------------|----------------------------|
| Transmittance Value (in %) | 5.68 | 0.03 | 1 | 3.23 | 9.02 | 9.64 | 4.89 | 0.42 |
| Haze | 88.57 | 100 | 87.35 | 89.55 | 87.9 | 89.97 | 89.16 | 90.43 |

Haze definition:

Transmitted light can be divided into straight transmitted light and diffused transmitted light. Diffused transmitted light causes a cloudy appearance, so high Haze reduces transparency.

$$\text{Haze} = \frac{\text{Diffraction transmittance}}{\text{Total transmittance}}$$

6. Fabrication

6.1. Sheet Characteristics :

Customer expectations are best managed by fully educating the customer about product characteristics. For instance, the "motion" or "veining" that appears on the surface doesn't continue directly through the sheet thickness. The top of a Marmo sheet looks nothing like the bottom of that sheet and the cross-section looks nothing like either surface. Some of these differences are shown below:



The color and pattern distribution on the top surface changes to random layers of colors and stripes distributed through the material's thickness.

Conventional "stacked" or "built-up" edges generally can not be used due to the dramatic color and pattern differences as seen in this Section



Recommendation :

Marmo & Aurora are equivalent material as any other HI-MACS" product, but it requires special consideration in order to fabricate an aesthetically pleasing finished product. We strongly advise the fabricator to confirm that the purchaser and the end user understand these considerations before proceeding.

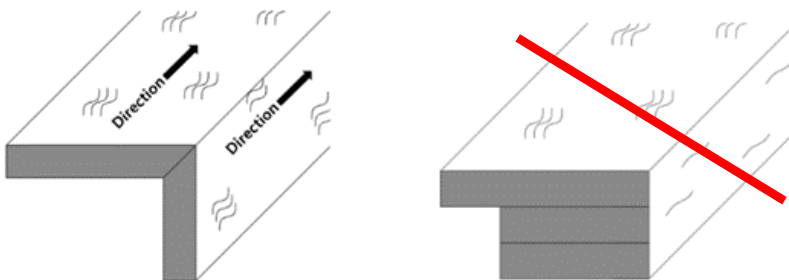
6. Fabrication

6.1.1 Special Sheet Characteristics - Aurora Calacatta Designs :

Customer expectations are best managed by fully educating the customer about product characteristics. For instance, the "motion" or "veining" that appears on the surface doesn't continue directly through the sheet thickness. The top surface of Aurora Calacatta designed sheet looks nothing like the bottom of that sheet, due to the specific product process, Calacatta veins **are only 3mm depth** into the product. This particularity must be taken in account during fabrication process :

For Edges Fabrication, HIMACS recommend to use the following way of assembly

- A 45° angle assembly will give the proper visual aspect



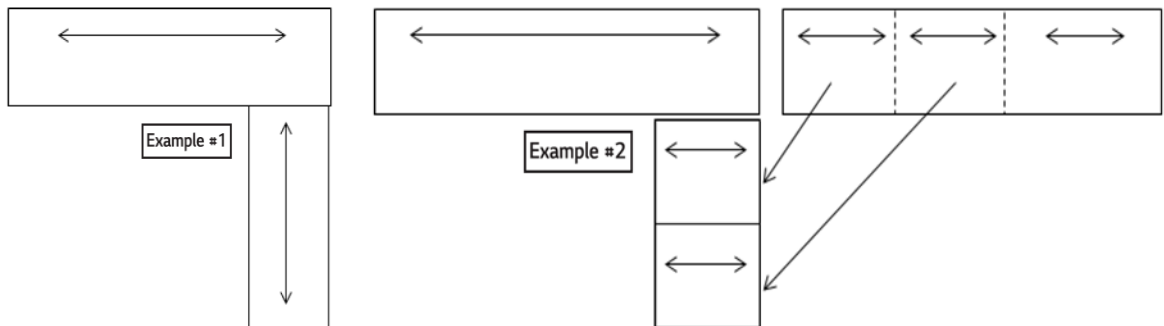
- The veins position into the product do not allow strong and long sanding process on the product can reduce the visual effect of Calacatta Design and in some cases make the veins disappear.
- **Veins depth : 3 mm from the Top surface**

Recommendation :

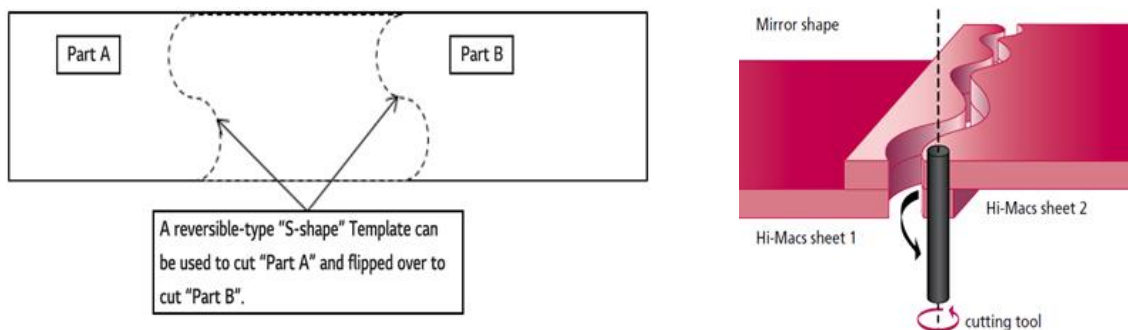
Aurora Calacatta designs are equivalent material as any other HIMACS product, but they require special consideration in order to fabricate an aesthetically pleasing finished product. We strongly advise the fabricator to confirm that the purchaser and the end user understand these considerations before proceeding.

6.2. Sheet to Sheet bonding flow:

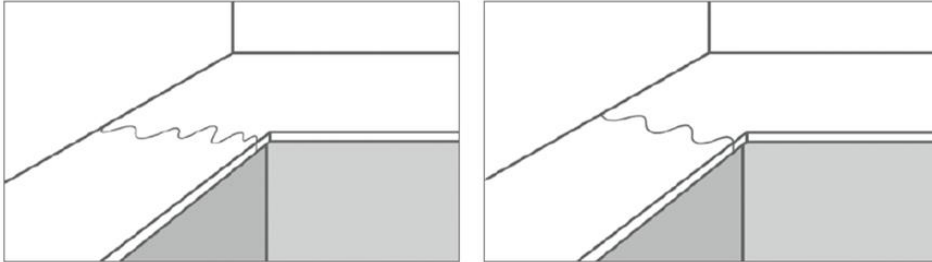
Fabricating an "L-shape" or "U-shape" countertop presents other challenges. Depending on the character of the HIMACS material, in some cases you may wish to have the "extension(s)" placed perpendicular to the primary surface (Example «1). In other cases, you may find that placing the "extension(s)" on the same plane as the primary surface works best (Example #2). There's no way to determine which method will work best with any colour other than to visually evaluate the configurations.



Fabricating field seams using an "S" seam can help make those seams less visible. "Inconspicuous" seams are extremely difficult to create but creating the seam in an "S" shape will help to reduce the visual impact when two pieces of material with random patterns and color distribution are joined.



To achieve the best result of the visible pattern direction, particularly with the MARMO & AURORA colours : an irregular seam flow may be more effective and shows less pattern chip/structure cut between one to the other sheet



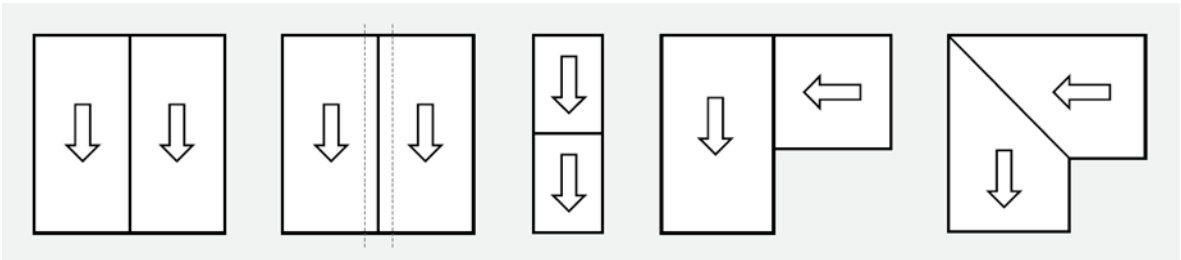
An even more irregularly directed cut must be prepared straight and parallel. Then re-sand with sandpaper of approx. 180grit (or 60 micron).

- Always clean the cut edges with a white cloth and use denatured alcohol or acetone.
- Ensure the edge is straight when making a “butt”-seam.
- Better still, make a profile, such as a tongue and groove.
- Ensure always to fabricate a re-enforcement strip (for kitchen worktops a 45° angled edge and smooth the adhesive line) from underneath.
- Always tighten pressure – but do not over tighten the pressure to the seam.

Note:

HIMACS adhesive is not developed as filler for repairs. In the case of damage to the surface it is strongly recommended to make a plug repair if possible (tools are available on the market – please contact your local technical support).

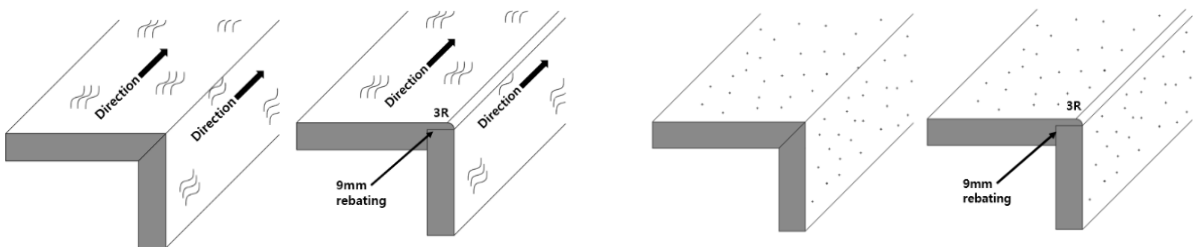
Before and during the gluing process between the sheets, check the best possibility of veining according to the fluidity of the design. Whatever design is chosen visual assessment is the only way to determine the best colour combination. We strongly advise the fabricator to confirm that the purchaser and the end user understand these considerations before proceeding.



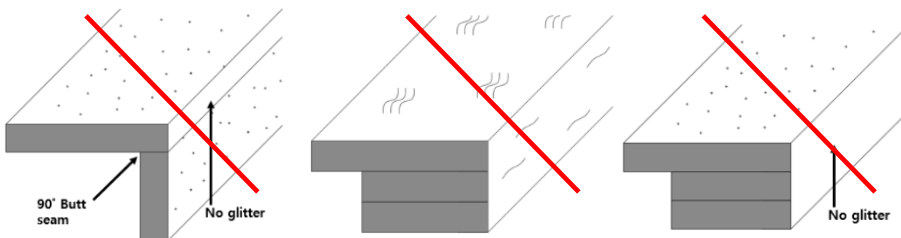
Note:

It is Fabricator's responsibility to find the best assembling arrangement of the veining layout as samples show above.

Recommended edge design



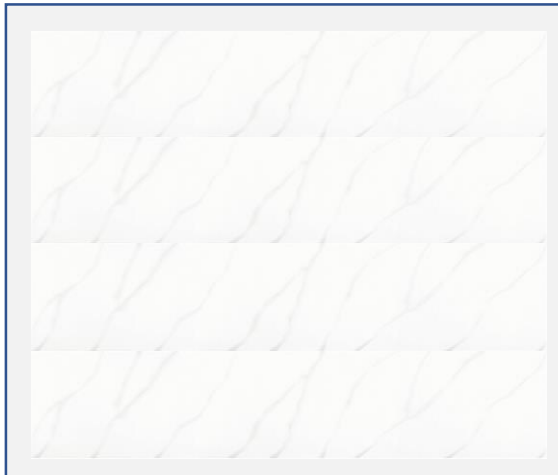
Non-Recommended edge design



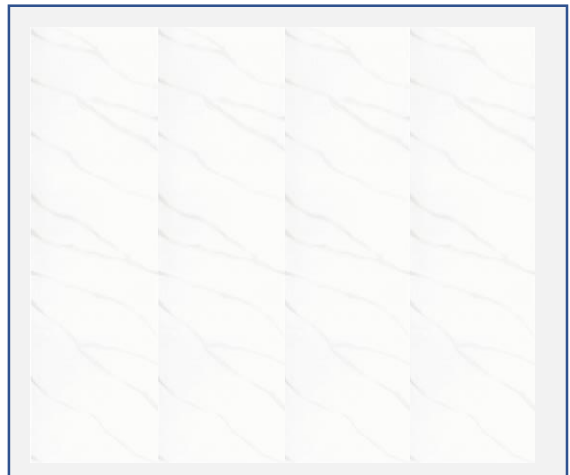
Important information : Aurora Calacatta Designs

Due to the veins design on M801 Calacatta Luna & M802 Calacatta Fiore a continuous creation of veining will be not possible to arrange, the view will be like below sample:

Veins in M801 Aurora Calacatta Luna & M802 Aurora Calacatta Fiore, are only 3 mm depth in the product. Strong and long sanding processes could change the final design as veins can disappeared



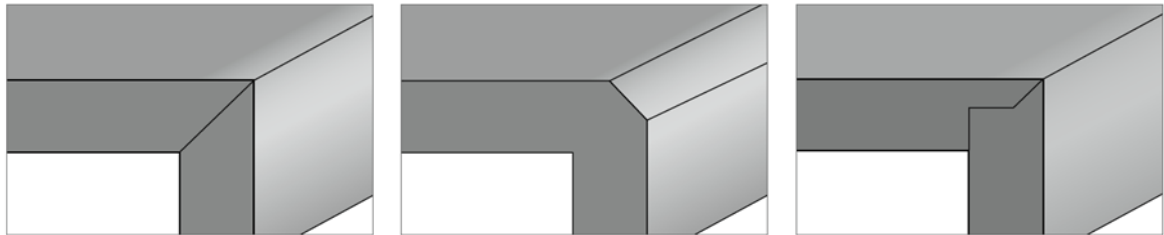
Horizontal view of full sheets of M801,
same effect on M802



Vertical view of full sheets of M801,
same effect on M802

6.3. Edge bonding flow:

To let the pattern flow around the edges a 45° angled cut of the edge or an alternative rebate is one of the best solutions.



Standard V-grooved

Standard with bevel

Standard V-grooved and angled

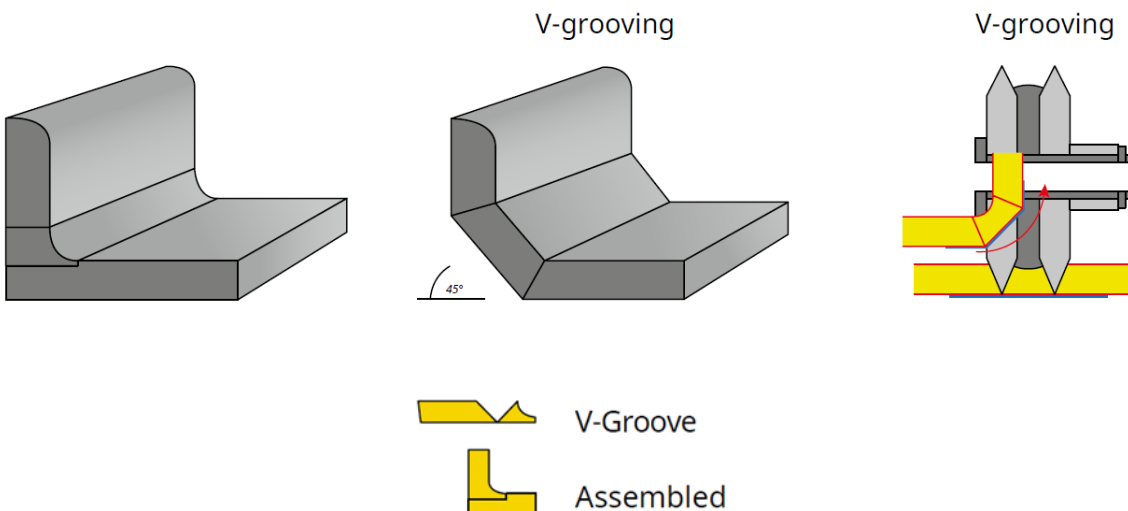
For the bonding process of the edges please follow the instructions of edge treatments.

HIMACS strongly advise the fabricator to confirm that the purchaser and the end user understand these considerations before proceeding whilst best to prepare a sample and let this design sign off.

Please refer to §6.1.1 for Calacatta designs

6.4. Backsplash flow:

To let the pattern flow around the edges a 45° angled cut of the edge or an alternative rebate is one of the best solutions.



When preparing a curved upstand or downturn, customers may not accept the result. One may not compare, though with UNI colours mostly used in the kitchen market. A downturn or an upstand may best achieve with a 45° angle or a profiled folding option – see picture 3 (V-grooving -p14).

7. Sanding (finishing)



Standard recommendation

| FINISH-LEVEL | MATT-FINISH | | SEMI-GLOSS-FINISH | | HIGH-GLOSS-FINISH | |
|----------------------|--|--|--|--|-------------------------------------|----------------|
| HIMACS colour family | for all colours | | for all colours | | for all colours | |
| Sanding steps | micron-sandpaper | grid-sandpaper | micron-sandpaper | grid-sandpaper | micron-sandpaper | grid-sandpaper |
| Step 1 | 100/80 µ | 150/180 µ | 100/80 µ | 150/180 µ | 100/80 µ | 150/180 µ |
| | take dust away | | take dust away | | take dust away | |
| Step 2 | 60 µ | 220 | 60 µ | 220 | 60 µ | 220 |
| | take dust away | | take dust away | | take dust away | |
| Step 3 | "useit®" Superpad S/G Scotch Brite™ Maroon 7447 | 280 | 40/30 µ | 280/320 | 30 µ | 280/320 |
| | take dust away | | take dust away | | take dust away | |
| Step 4 | industrial paper towel | "useit®" Superpad S/G Scotch Brite™ Maroon 7447 | "useit®" Superpad S/G Scotch Brite™ Maroon 7447 | 380/400 | 15 µ | 380/400 |
| | take dust away | | take dust away | | take dust away | |
| Step 5 | | industrial paper towel | industrial paper towel | "useit®" Superpad S/G Scotch Brite™ Maroon 7447 | 9 µ | 600/800 |
| | | | take dust away | | take dust away | |
| Step 6 | | | | industrial paper towel | Finesse-it™ Finish- component | 1200 |
| | | | take dust away | | take dust away | |
| Step 7 | | | | | | 1500 |
| | | | | | | 1800 |
| | | | | | | 2500 |

8. Thermoforming

To prepare the workpieces, follow the standard thermoforming process (for more information's see FM22EU, 7.15 Thermoforming)

For Thermoforming process to recommend best by using a pre-heating oven with double sided heating plates.

Heating Temperature:

155°C - 175°C



Heating Time:

12 - 30 min.



The heating time is equivalent to the general heating time of HIMACS products for the thermoforming process.

- The classification of a minimum radius for AURORA is $\geq 100\text{mm}$.
- The classification of a minimum radius for MARMO is $\geq 200\text{mm}$.

Be aware that any undertaking of recommended radii can cause some colour change or create some cracks.

For further details of thermoforming process see also our FM22 EU, section 7.15 THERMOFORMING.

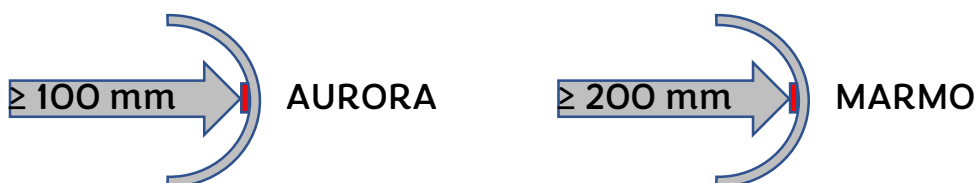
For any technical inquiry contact your local technical support.

For more detailed thermoforming equipment or any thermoforming accessories please contact global@nabuurs.com or visit the web-site: www.globalvacuumpresses.com

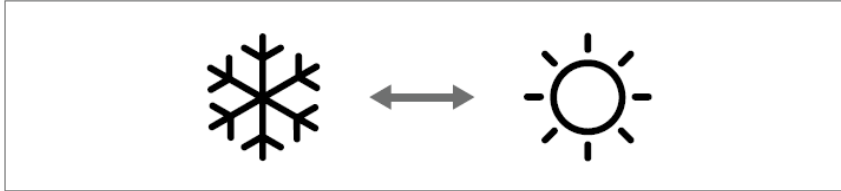
Note:

Be aware that the veining may change in size when turning into a curve.

As smaller the radius becomes as wider the veins gets but more cautions to be looked for when using dark colors to avoid unexpected whitening.

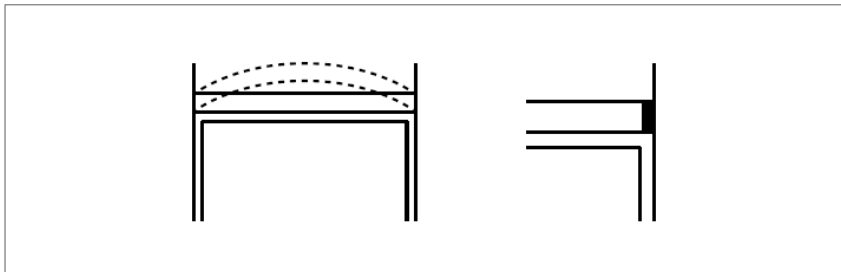


9. Thermal Expansion



Sufficient space should be given to compensate for expansion or contraction at the time of installation since this product may expand or contract depending on the temperature.

Allow 1.5 mm per linear meter for expansion and contraction.



Expansion coefficient HIMACS according to norm DIN EN 14851:

$$\Delta t = \text{ca. } 38 \times 10^{-6} / \text{K}$$

10. Quality Check

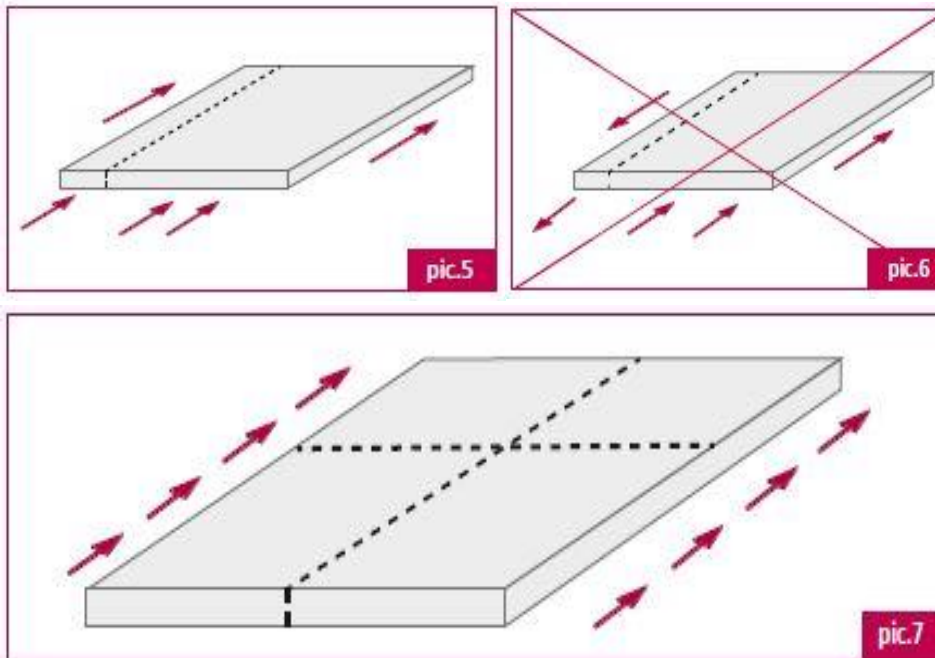
- Check any fabricated item on quality aspects before leaving the workshop.
- In case of any mistakes, it easily can be repaired in the workshop and keeps the time of re-work very low.
- Any damage or any mistake which will be recognized later will make the fixing much more expensive.

Important information:

The 15 Year Limited Installed Warranty does not cover any failures due to fabrication or installation mistakes.

11. Summary of important information :

When using several sheets for doing one job ensure a continuous flow of sequential numbers as well as the same production flow.
Do not turn one sheet into a different direction from the next or opposite side (**no turn** of any sheet by 90°, 180° or 270°).



- Fabricating field seams using an "S" seam can help make those seams less visible. "Inconspicuous" seams are extremely difficult to create but creating the seam in an "S" shape will help to reduce the visual impact when two pieces of material with random patterns and color distribution are joined.
- Marmo & Aurora are equivalent material as any other HI-MACS" product, but it requires special consideration in order to fabricate an aesthetically pleasing finished product. We strongly advise the fabricator to confirm that the purchaser and the end user understand these considerations before proceeding.
- The 15 Year Limited Installed Warranty does not cover any failures due to fabrication or installation mistakes.
- It is Fabricator's responsibility to find the best assembling arrangement of the veining layout as samples show above.

- Veining may change in size when turning into a curve. As smaller the radius becomes as wider the veins gets but even more cautions to be taken, when using dark colors to avoid unexpected whitening.

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