Tuflite™ Synthetic Roof Tiles are special 3 layer co-extruded roofing sheets, coated with Geloy ASA resin and developed with advanced technologies for opaque roofing markets. The top layer is made of Geloy ASA resin, and has extraordinary weatherproof properties for outdoor use, which helps retain its color for extended periods of time. Direct exposure to extreme climatic conditions – UV rays from the sun, rain, extreme heat/ cold does not cause deterioration of its strength, physical or mechanical properties. It is therefore considered the best polymer substrate for outdoor use.

Tuflite™ Synthetic Roof Tiles offer a wide range of advantages over traditional roof cladding. The physical properties of the synthetic roof tiles permit installation of the tiles/ sheets in both residential and industrial applications. They are proficient in thermal and sound insulation. They do not use any minerals like clay or sand, and are recyclable. Unlike the kiln baked natural tiles and glass, the discarded materials do not just occupy landfills, instead they may be reused in their polymer form.

Tuflite™ synthetic roof tiles have an excellent resistance to corrosive chemicals and atmospheric pollutants. They are manufactured from UPVC and have excellent chemical resistance when compared to any other polymer based roofing sheet.

**PRODUCT RANGE**

Royal Tile 1040          Roma Tile

**APPLICATIONS**

*CONSTRUCTION INDUSTRY*

- Factory Roofing
- Warehouse Roofing
- Railway Stations

*RESIDENTIAL*

- Home Roofing
- Deck Coverings

**COLORS AVAILABLE**

- Grey
- Wine Red
- Dark Grey
- Brown
- Black
- Bright Red
- Paca Antique
- Terracotta
# Standard Properties

## Physical Properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Standard</th>
<th>Units</th>
<th>Value</th>
<th>Conditions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Density</td>
<td>ASTM D792</td>
<td>g/cm³</td>
<td>1.2</td>
<td></td>
</tr>
<tr>
<td>Water Absorption</td>
<td>ASTM D570</td>
<td>%</td>
<td>0.15</td>
<td>10mm/min</td>
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</tbody>
</table>

## Thermal Properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Standard</th>
<th>Units</th>
<th>Value</th>
<th>Conditions</th>
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</thead>
<tbody>
<tr>
<td>Heat Deflection Temperature</td>
<td>ASTM D648</td>
<td>°C</td>
<td>135</td>
<td>1.82MPA LOAD</td>
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<tr>
<td>Coefficient of Linear Thermal Expansion</td>
<td>ASTM D696</td>
<td>mm/m °C</td>
<td>0.065</td>
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<tr>
<td>Thermal Conductivity</td>
<td>ASTM C177</td>
<td>W/M K</td>
<td>0.21</td>
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<tr>
<td>Specific Heat Capacity</td>
<td>ASTM C351</td>
<td>Cal/(°C Kg)</td>
<td>1.26</td>
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<tr>
<td>Service Temperature</td>
<td></td>
<td>°C</td>
<td></td>
<td>-40 TO 120°C</td>
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</table>

## Mechanical Properties

<table>
<thead>
<tr>
<th>Property</th>
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<th>Units</th>
<th>Value</th>
<th>Conditions</th>
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</thead>
<tbody>
<tr>
<td>Tensile Strength at Yield</td>
<td>ASTM D638</td>
<td>MPA</td>
<td>60</td>
<td>10mm/min</td>
</tr>
<tr>
<td>Tensile Strength at Break</td>
<td>ASTM D638</td>
<td>MPA</td>
<td>65</td>
<td>10mm/min</td>
</tr>
<tr>
<td>Elongation at Yield</td>
<td>ASTM D638</td>
<td>%</td>
<td>100-55</td>
<td>10mm/min</td>
</tr>
<tr>
<td>Elongation at Break</td>
<td>ASTM D638</td>
<td>%</td>
<td>&gt;90</td>
<td>10mm/min</td>
</tr>
<tr>
<td>Tensile Elasticity</td>
<td>ASTM D638</td>
<td>MPA</td>
<td>2300</td>
<td>1mm/min</td>
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<tr>
<td>Flexural Strength at Yield</td>
<td>ESTEEM D790</td>
<td>MPA</td>
<td>100</td>
<td>1.3mm/min</td>
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<tr>
<td>Impact Falling Weight</td>
<td>ISO 6603</td>
<td>J</td>
<td>158</td>
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<tr>
<td>Rockwell Hardness</td>
<td>ASTM D785</td>
<td>R Scale</td>
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</tbody>
</table>

## Visual Properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Standard</th>
<th>Units</th>
<th>Value</th>
<th>Condition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Haze</td>
<td>ASTM D1003</td>
<td>%</td>
<td>&lt;0.5</td>
<td>CLEAR SHEET</td>
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<tr>
<td>Refractive</td>
<td>ASTM D542</td>
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<td>1586</td>
<td>CLEAR SHEET</td>
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<tr>
<td>yellowness Index</td>
<td>ASTM D1925</td>
<td></td>
<td>&lt;1</td>
<td>CLEAR SHEET</td>
</tr>
</tbody>
</table>
GUIDELINES FOR PROPER INSTALLATION

ENSURE THAT ALL HANDLING & INSTALLATION INSTRUCTIONS ARE PROPERLY READ AND UNDERSTOOD PRIOR TO COMMENCING WORK.

CAUTION: SAFETY ALWAYS COMES FIRST. ENSURE EXTREME CARE WHEN WORKING ON THE ROOF. DO NOT WALK DIRECTLY ON THE SHEETING. USE WALKING PLANKS OR BOARDS SPANNING AT LEAST TWO PURLINS. ALWAYS WEAR APPROPRIATE FOOTWEAR. WEAR SAFETY GLASSES WHILE CUTTING OR DRILLING THE SHEETS.

Installation tools

Construction line, portable thin-tooth saw, portable cutter, rolling ruler, spanner and portable polisher.

Installation of main Tile

Place the first sheet as close as possible to the vertical construction line, fix it onto the first tile of the second vertical row, according to the supporting network provided. The first row must under no circumstances be perforated or drilled into. Similarly, proceed to do the second fixing in accordance with the most risen rafter. Overlap the second sheet laterally onto the first, and fix with self-screws on the first lowest tile which corresponds to the overlap.

To keep the correct alignment to the fixings we recommend the use of a line of reference fixed to the extreme end of the final sheet may have to be cut in accordance with the frame dimensions.

For the second row, we recommend that one begins from the left side of the structure, with a sheet that is cut in half length ways (there rows of tiles) This allows one to continue with a horizontal overlap of staggered rows, and as such would avid a crossover of four sheet on the overlap.

The leftover vertically cut sheets at the beginning are not wasted, as they can be used at the end of the roofing as adjustments. Complete the opposite side in the same way. Line up the vertical rows of tiles on the second side with those length of 75mm and a diameter of 6.3mm are needed to fix the main tile.

For lower slope or in particularly windy zones it is appropriate to seal the overlap using a resin sealant. Particular care can create problems and alignment issues at the end of the day.

Ridge Tile

The installation of ride tile should being from one side. The first tile, is to be cut in half to avoid the crossover of four sheets on the overlap. Self-screws with the length of 75mm and a diameter of 6.3mm will be needed to fix the ridge tile into the main tile. Care should be taken to avoid fixing the ridge very close to the edge. This will help prevent water ingress issues.

Diagonal Ridge

While installing the diagonal ridge, care must be taken to align the ridge to the hip line. Self-screws with a length of 75mm and a diameter of 6.3mm are needed to fix the prefabricated edges to the main tile. Diagonal ridge tiles are to be installed from the bottom to the top.

Three-way Ridge

A three-ay connection is used as the joining element between a linear ridge and a diagonal one on a four way slope of roof.

Connection with Wall

Use a sidewall flashing, stick the strip to the wall and seal the higher end of strip with a silicon sealant.

Use a soft-joint roll, stick the strip to the wall and seal the higher end the higher end of strip with silicon sealant.
1. WAY RIDGE
A3-way ridge is used as the Coining element between the linear ridge and the diagonal ridge for a four slope roof.

2. RIDGE UNIT
Install ridge unit from one side and cut the first tile in half to avoid the crossover of four sheets on the overlap.

3. MAIN TILE
Overlap by one wave and every sheet should be assembled as close as possible to the one overlapped. Cut the first sheet of second row in half to avoid the crossover of four sheets in the overlap.

4. BARGE BOARD
After finishing assembling of main tiles, fix barge board on the last row of tiles by supplied fittin.

5. EAVE TILE
The eave tile is supplied only for choice. Insert the eave tile into the bottom of main tile and be fixed.

6. DIAGONAL RIDGE
Install diagonal ridge tile form bottom to top with a overlap of 50mm. Align the diagonal ride in to straight line.

7. TERMINAL DIAGONAL RIDGE
After finishing the assembling of diagonal ridge, insert the terminal diagonal ridge into the bottom of diagonal ridge and be fixed.

8. PURLIN
The purlin space for Royal Tile 720 and 1040 is 660mm, for Syntile 780 is 710mm and for Roma tile is 990mm.

9. VALLEY GUTTER
Fix the valley gutter made in geloy panel or metal on the valley purlins before the installation of main tile. The sheets corresponding to the valley line must be pre-shaped before positioning.
1. Eave
The eave is where the roof drains into the gutter and is the point where there is maximum water, therefore attention to detail is very important. If there is a gap below the tiles at the eaves of 16mm or more, then eave fillers are required for profiled tiles to prevent access to bird and rodents.

2. Verges
Where the roof starts and finishes at a gable wall, is commonly referred to as the roof verge. Traditionally, verges are finished with mortal bedding, but to avoid the need for future maintenance, most of our tile and slate ranges can be dry-fixed using a cloaked tile or dry verge system.

3. Ridge
The ridge line finishes off the roof at the top and the ridge tiles can be fixed. Unlike mortal bedding, dry systems can be fixed in any weather and require very little maintenance. Ridges also offer great design opportunities using decorative ridges and finials. As with the eaves, the ridge can play a major part in ventilating the roof, so again it is worth considering using the dry ridge system to ensure adequate ventilation.

4. Hip
A hip is where two roof slopes meet, forming a junction from which water runs away. Like the ridge, the hip junction can either be bedded or finished dry for an all weather fixing, maintenance free finish.

5. Valley
A valley is where two roof slopes meet, forming a junction into which water runs. Valleys are made watertight using fiberglass or lead to line the valley. With plain tiles, valley tiles can be used for aesthetic purposes. Tile-and-a-halfs are available for aisle tiles to assist setting out.

6. Top Abutment
Where a roof meets a wall or other vertical projection at the top of the filling, this is referred to as a top abutment. Top abutments are finished using a lead cover flashing.

7. Side Abutment
A side abutment is where a roof verge meets a wall that rises above the tiling. Profiled tiles can be weathered using a cover flashing. For flat tiles, a secret gutter should be used, and for double lapped tiles and states, soaker should be used.
ACCESSORIES

- Ridge Unit for Royl 720
- Ridge Unit for Royl 1040
- Ridge Unit for Royl 780
- 3-way Ridge Unit for Royal tile and Syntile
- Diagonal Ridge for Ridge 720, 1040 and anytile 780
- Diagonal Ridge for Roms tile
- 3-way ridge for Roms tile
- Terminal Diagonal Ridge
- Fittings

BENEFITS

- LIGHT WEIGHT
- ALL WEATHER RESISTANT
- EASE OF MAINTENANCE
- HIGH IMPACT RESISTANCE
- TRANSPARENCY
- UV BARRIER
- FIRE RETARDANT
- CHEMICAL RESISTANCE

TUFLITE OFFERS A 10 YEAR WARRANTY ON ALL POLYCARBONATE SHEETS **

** Refer to manufacturers warranty guide. Please refer to installation manual for methods.