

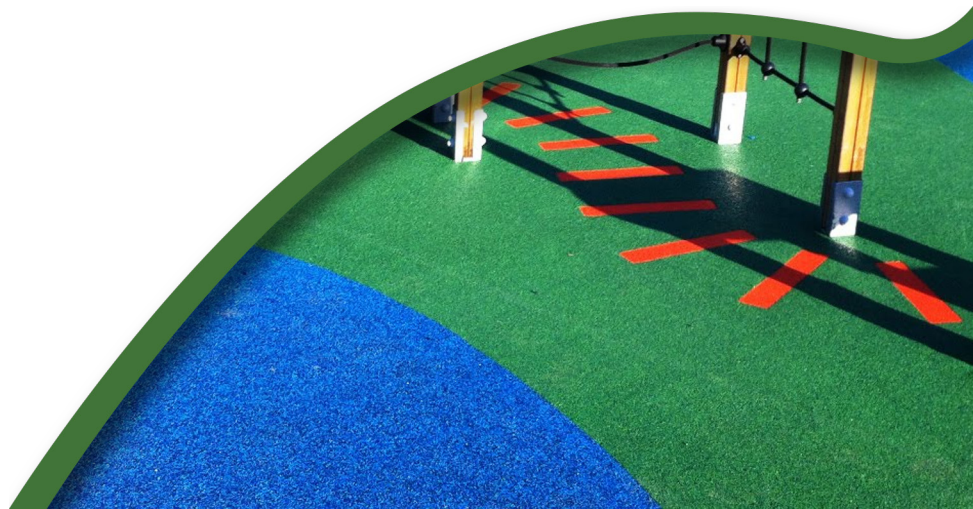


# PERMABOUND

## Colourbound

Rubber Playground Surface

Technical Specification  
& Installation Guide



## The Colourbound Solution

Preparation is an important part of any successful project. The ground must be prepared and levelled before laying the SBR base layer for Colourbound rubber materials. The base layer is determined by the overall depth needed to achieve a particular critical fall height. More information can be seen in the table “SBR/Colourbound Depth Calculator” which gives the required proportion of SBR to Colourbound to achieve any depth up to 100mm.

Colourbound toppings can be cut or shaped into patterns or objects such as geometric shapes, different and contrasting colours can then be laid up to the adjacent colour providing striking and pleasing looks which are both appealing and safe.

Base layers are typically mixed up with a ratio of 10% binder by weight, so for example a depth of 20mm will require 12.5kg of SBR per square metre and will need to be mixed with 1.25kg of binder.

$$\text{Base Layer SBR (12.5kg)} \div 10 = \text{Binder requirement (1.25kg)}$$

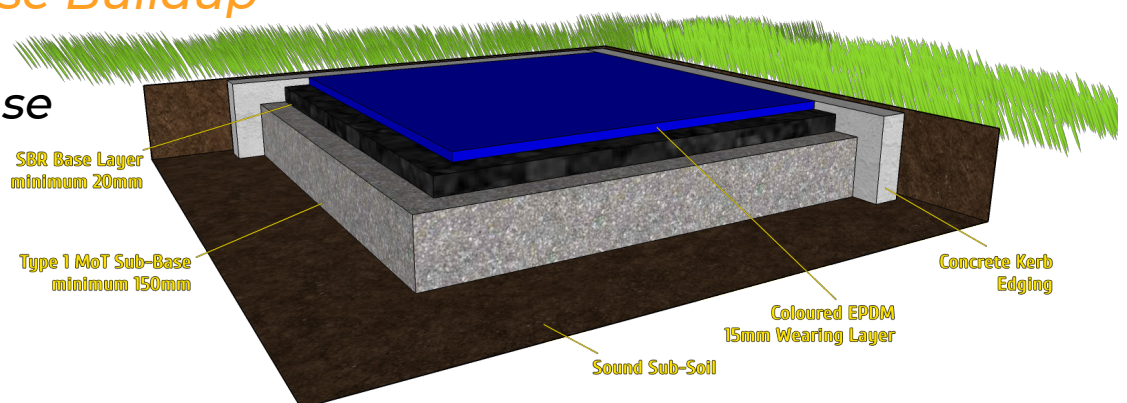
Colourbound toppings are usually mixed with a 20% binder by weight ratio, for example a Colourbound topping of 15mm will require 12.5kg of granules per square metre and 2.5kg of binder.

$$\text{Colourbound (12.5kg)} \div 5 = \text{Binder requirement (2.5kg)}$$



## The Sub-Base Buildup

### New Sub-Base

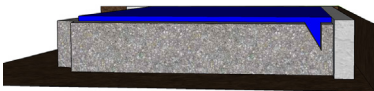


Where a new sub-base layer is required, the area should be excavated to a depth of a minimum of 150mm and a maximum of 300mm. This should be filled with MoT Type 1 crushed stone hardcore and compacted evenly, ensuring that the surface is as level as possible, building up any divots and planing any lumps. Perimeter edging should be installed to retain the fill materials and are usually either a pre-cast concrete kerb, pre-treated or tanalised wood or plastic timber to help combat gradual degradation of the edges of the installation.

The thickness of the SBR base and Colourbound topping will depend on the required critical fall height of any fixed play equipment present on the site. The minimum thickness of surfacing to be laid onto a compacted stone sub-base is 35mm.

## Existing Sub-Base

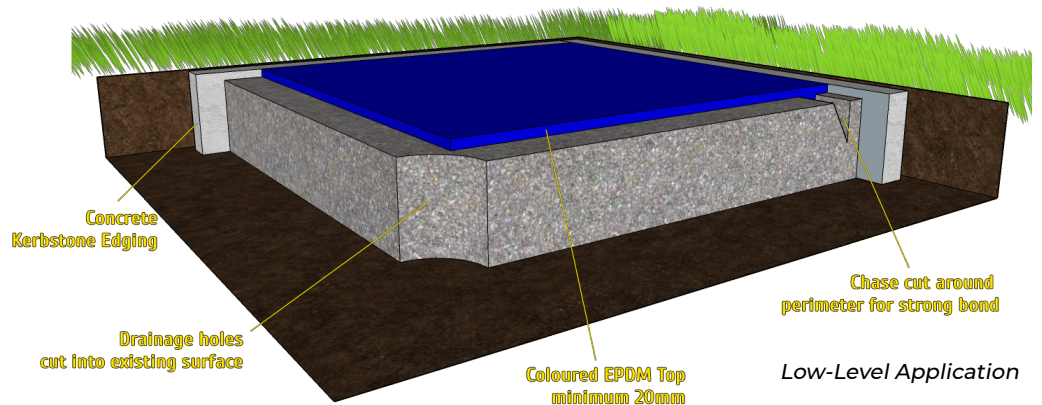
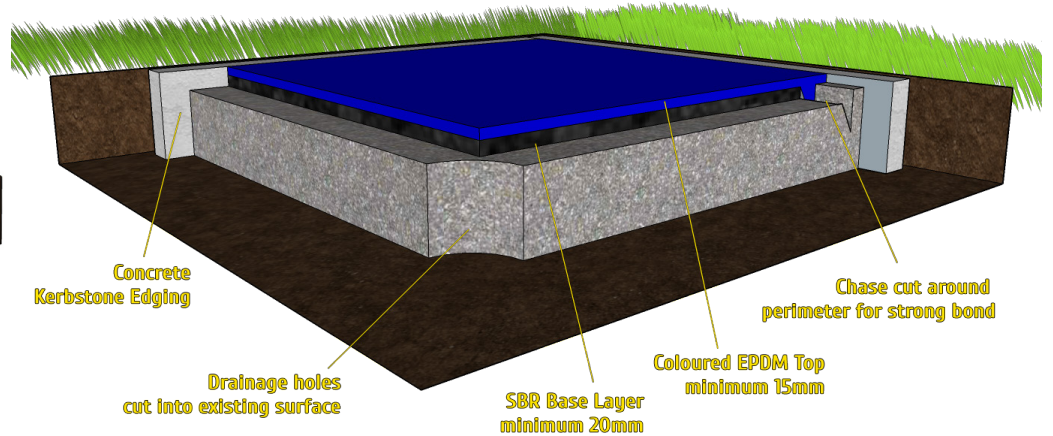
Side view showing Chase-cut



PERMABOUND Colourbound surfacing can be laid onto existing hard surfaces such as tarmac, concrete and paving slabs, which can help with reducing the cost of your project by utilising the existing surface.

The surface should be in a good condition and clear of weeds, moss and debris. If the existing surface is not porous, the drilling of drainage holes may be required at regular intervals throughout the area.

Should the existing surface be in good, sound condition with no broken or crumbling tarmac or concrete or uneven paving slabs, then a wearing layer of Colourbound may be laid at 15mm thickness on top of an appropriate SBR base where needed. Please take guidance from the SBR/Colourbound depth calculator below for required thickness.



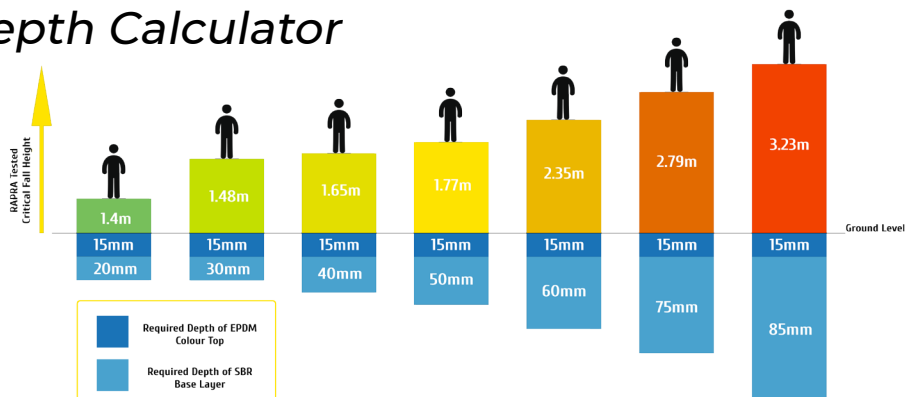
MUGA installations will not require an SBR base as there is no critical fall height required. To create a strong bond between the existing surface and the new safety surface a perimeter chase cut may be required (see fig).

## Material Spreading Rates

### SBR/Colourbound Depth Calculator

The diagram opposite provides the detail on how much SBR base layer and Colourbound top is required to achieve a specific Critical Fall Height.

These Critical Fall Height values have been tested by RAPRA and certification is available upon request.



### Spreading Rates per M<sup>2</sup>

Total Surface	Black Base Layer (SBR)			Coloured Wearing Layer (Colourbound)		
	Depth (mm)	SBR 2-6mm (kg)	Binder @10% (kg)	Depth (mm)	Colourbound 1-4mm (kg)	Binder @ 20% (kg)
35mm depth	20	12.5	1.25	15	12.5	2.5
45mm depth	30	18.75	1.88	15	12.5	2.5
55mm depth	40	25.00	2.5	15	12.5	2.5
65mm depth	50	31.25	3.13	15	12.5	2.5
70mm depth	55	34.38	3.44	15	12.5	2.5
75mm depth	60	37.5	3.75	15	12.5	2.5
90mm depth	75	46.88	4.69	15	12.5	2.5
100mm depth	85	53.13	5.31	15	12.5	2.5

PERMABOUND does not warrant spreading rates and the above detail is dependant on the sub-base and installer techniques. The binder ratio for blacks Colourbound installations must be increased by volume to allow for the lower specific gravity.

### Technical Performance

Technical Property	Specification
Surface Thickness	8mm to 110mm
Surface Design	Trowel or machine finish
Hardness	65 to 70 shore A
Permeability	Porous
Abrasion	RV32 (DIN18032/6)
Dimensional Stability	98%
Tensile Strength	>1.2 n/mm <sup>2</sup>
Elongation at Break	>120%
Effect of Lit Cigarette	Non-combustible
Ball Rebound	98%
Sliding Resistance	Dry 86 (BS7188:1988) Wet 45 (BS7188:1988)
Type of Surface	Jointless - cast in-situ
NCO Content	Binder 8.0% to 9.5%
Specific Gravity	Colourbound 1.50 to 1.60 Binder 1.07 @ 200c
Viscosity	-POLY46 -POLY811 2200 - 3600 mpas @ 250c 3200 - 4600 mpas @ 250c

### UV Resistance

Colourbound Colour	1000 hrs Grey Scale
Red	4-5
Earth Yellow	4
Eggshell	4
Beige	4
Light Grey	4
Dark Grey	4
Green	3-4
Blue	3-4
Light Blue	3-4
Orange	3-4
Light Green	3
Purple	3
Bright Yellow	3

These values are for the Colourbound without binder, measured on a standard grey scale after 1000 hours exposure to UV light. This is equivalent to 3 to 7 years normal weathering.

A reading of 5 means there is no change to the colour.

### Storage

Binder - Dry conditions >3°C to <35°C. Shelf life of 6 months  
Granules - Dry conditions

## Surface Maintenance

### Essential Preventative Steps

Routine maintenance will ensure that the playing surface is kept clean and delivers consistent performance.

- Sweeping leaves and other debris from the surface
- Brushing the surface to prevent any accumulation of an impervious skin on the surface which may impede drainage
- Ensuring that only appropriate footwear is used on the surface, high-heeled shoes, studs and spikes may cause damage to the surface
- Inspecting the surface for signs of damage and arranging remedial repairs promptly

### Weeds

No matter how much care is taken, weeds may appear on the surface usually as a result of wind blown seeds. Small numbers of weeds may be removed by hand without damaging the surface. Localised areas of self-set weeds can be removed by treating them with a domestic weed-killer without causing damage to the surface. Oil based weed-killers must not be used.

## Maintenance Schedule

### Weekly

Clear leaves, rubbish and debris from the surface; dealing with any new weeds, moss or algae following the guidance above. The whole surface should be inspected for damage and should there be any present, seek advice from the manufacturer on how to repair it as required.

To ensure longevity of the surface and to inhibit the growth of moss, algae or other vegetation on the surface, a routine clean using hot (not boiling) water with washing-up detergent can be carried out.

### Keeping the Surface Clean

Leaves, flowers, pine needles and other debris should not be allowed to remain on the surface for any length of time. These rapidly rot down forming a drainage-inhibiting 'skin' within the surface and providing a growing medium for algae, moss & weeds.

### Stain Removal

Most stains are easily removed with a solution of hot (not boiling) water and a household detergent such as washing-up liquid. The removal of chewing gum is achieved by using a freezing aerosol. Heavy oil marks are removed with a cloth and methylated spirits.

### Snow & Ice

Snow and ice are not harmful and will melt, the water slowly permeating through the surface. Brushes or rubber-edged scrapers must be used to remove snow. The use of metal shovels and scrapers will damage the surface and must not be used; neither should chemical de-icing agents be used. If heavy rain falls immediately after a very cold spell, the surface may become flooded for a few hours. Do not worry as the ice will melt with time and the surface will then drain normally.

### Bi-annually

Check for growth of vegetation such as weeds, moss and algae. At the same time an inspection should be carried out for stains from food or other organic material such as animal waste. Shoe marks, food stains and other organic material can be removed by cleaning with a solution of hot water (not boiling) and washing-up liquid.

For tough stains a soft brush may be used to lightly excoriate the surface.