AGGREGATE INDUSTRIES

Asphalt

Supersport® laying guide

Life®
Sustainable Drainage Systems

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Supersport® is a highly durable, permeable 6mm surface course which has been developed to the exacting standards of the Sports And Play Contractors Association (SAPCA) and in conjunction with the Lawn Tennis Association (LTA).

Supersport has been specially developed to accommodate the growing demands for high performance sports surfaces and is available in two options:

Supersport Tennis: Purpose designed as a tennis only surface and highly recommended, this material will withstand continued tournament class tennis and is designed to be ready for play within 10 minutes of heavy rainfall.

Supersport MUGA: Developed to maintain maximum use from a facility where the play area is used for a whole range of sports including football and netball. Supersport MUGA (Multi Use Games Area) is extremely durable and should be free from water within 20 minutes of heavy rainfall.

A permeable a 10, 14 or 20mm binder course is also available on request offering a complete solution for sports surfacing requirements.

Transport, delivery and discharge

The excessive use of release agents to facilitate discharge and build up on tools is likely to cause softening or damage to the material which will directly affect the products in situ performance. Diesel or kerosene should never be used as a release agent. Due to the use of stiff binders during its manufacture it is essential that the asphalt is transported to the laying site in well insulated and sheeted vehicles to prevent an excessive drop in mix temperature and consequential loss of workability. This requirement is particularly important in adverse weather conditions. Wind will have a greater effect on the rate of cooling than ambient temperature. Supersport should where possible be used directly from the delivery vehicle which should be kept sheeted at all times. Where discharge from the delivery vehicle is a necessity the material should be tipped on plywood panel and protected against temperature loss at all times by use of an insulated quilt. The following table gives guidance on mix temperature at various stages throughout the construction process.

Binder grade	Maximum mix temperature (°C)	Minimum temperature on site (°C)	Minimum temp immediately prior to rolling (°C)
160/220pen	170	115	85
160/220pen with wax	170	140	100
160/220pen with latex	180	140	100
100/150pen	170	135	95

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Preparation works at site

If overlaying an existing surface the contractor must ensure that the area to be covered has adequate porosity if a free draining playing surface is required. Should the porosity be inadequate the contractor should provide an alternative method for water to leave the surface. Appropriate corrective action may include pressure washing, spiking the surface at 450mm centres and reinstating with clean single sized aggregate or selective reconstruction using a porous binder course.

Application of tack/bond coat

Where tack coat is deemed necessary, the receiving surface shall be well swept and free of all loose dust, dirt and other debris. A hot or cold applied tack coat should be carefully applied to ensure bond between layers if overlaying and existing surface and allowed to break. A K1-40 bitumen emulsion applied at rate of 0.2-0.3 litres/m² is considered adequate prior to the placing of the hot mix product.

Layer thickness/rate of spread

Supersport	Nominal layer thickness (mm)	Minimum thickness at any point (mm)	Rate of spread (m²/tonne)
6mm surface course	30-40	25	15-22
14 or 20mm binder course	50-80	45	5-10

Placing and spreading

Placing and spreading shall be carried out with due regard to ambient weather conditions and working practices shall be adjusted to ensure that the laid Supersport material is not left exposed to the elements prior to compaction in adverse weather conditions. Laying shall not commence below an ambient temperature of 5°C on a rising thermometer.

Courts and games areas will be typically laid by hand with Supersport screeded between steel batons and raked level before compaction. Steel bars should be set using dual-plane laser levels for accuracy. If there is a sufficiently stable formation or depth of foundation, laser-automated machines can be employed to lay the asphalt mixtures.

When hand laying, the material shall be spread in a uniform layer at the recommended minimum thickness taking every precaution to minimise segregation by excessive raking. Throwing back material to adjust profile or thickness should be avoided but should it become necessary the affected area shall be immediately compacted. Wheel barrowing of Supersport must be kept to a minimum.

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Compaction

To achieve maximum performance Supersport requires full compaction on installation. Contractors should use the heaviest roller that can be supported by the construction. As a minimum a static steel wheeled roller of a minimum dead weight of 2.50 tonnes or a vibrating roller of a minimum dead weight of 600kg shall be used. Compaction should commence without causing undue displacement to the material and continue until no further roller marks are visible. The number of passes is determined by the roller type and weight but shall not be less than 6 whilst the material is above minimum rolling temperature. No vibration should be employed at temperatures below the minimum rolling temperature.

The time available for compaction is a function of layer thickness, ambient temperature and wind speed. Compaction should be undertaken with due regard to ambient weather conditions (particularly wind speed) and working practices shall be adjusted to ensure that the materials is substantially compacted before reaching the minimum rolling temperatures indicated in the table above.

The following table illustrates the effects of wind chill on layer thickness less than 50mm and should be referred to as a guide to adjusting working practice.

	Ambient air temperature			
	13ºC	7ºC	2ºC	-4ºC
Wind speed (mph)	**Wind chill factor (feels like ºC)**			
5	12	7	0	-7
15	8	0	-9	-17
25	3	-5	-13	-22
35	1	-7	-16	-25

Joints

All longitudinal and transverse joints shall be neat, straight and unobtrusive, made vertical and flush and should not affect the bounce of the ball. Where necessary joints may be carefully painted with a thin coating of bitumen emulsion. Care should be taken to avoid surplus bitumen on the surface after the joint is made.

Aftercare

Immediately after construction, some asphalt sports surfaces may retain water on the surface as a result of surface tension. This is a temporary phenomenon and will improve with use. This should not be construed as a defect. Most court surfaces require some degree of extra care when used during the immediate post-construction phase. Asphalt surfaces may be subject to some temporary softening during hot weather for the first month. The purchaser should be advised as to when the court may be first used and any precautions that may be necessary until the surface has fully cured. Painting will normally take place after the surface binder film has oxidised.

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