



Landscapus INC

Technical Data Sheet (TDS)

AS/NZS 2009:2006 Glass beads for pavement-marking materials

Characristice:AS 2009:2006/Bright glass beads:

<i>Chemical Composition(by weight):</i>	<i>Physical Properties:</i>
Silica(SiO ₂) 62-75%	Specific Gravity 2.5g/cm ³
Aluminum Oxide (Al ₂ O ₃) 0-5%	Softening Temperature 650°C
Calcium Oxide (CaO) 6-17%	Coefficient of Thermal Expansion 90 x 10 ⁻⁷ /°C (30-300°C)
Magnesium Oxide(MgO) 1-5%	Strength 60,000 to 65,000 psi
Sodium Oxide(Na ₂ O) 10-20%	Vicker Hardness 756,250 pis
Iron Oxide (Fe ₂ O ₃) <0.8%	Refractive Index 1.50 (nD)

2 GENERAL

Glass beads are used in a range of sizes in conjunction with both hot- and cold-applied pavement markings. These beads are also available with special coating grades including 'Moisture-proof', and 'Adherence'.

3 BEAD TYPES

3.1 Class A beads (premix)

Class A beads are mixed into road-marking material by the manufacturer prior to application, and are intended to provide retroreflectivity throughout the life of the marking. These beads are to be mixed at a rate of not less than 30% by mass.

3.2 Class B beads (drop-on)

Class B glass beads are applied under gravity or pressure as a surface application to a wet film of pavement marking to provide initial retroreflectivity. These beads should be applied on a smooth substrate. A nominal rate of 270–300 G/m² may be appropriate, while a coarse surface substrate usually requires a higher application rate to achieve the required level of retroreflectivity.

NOTE: These beads have a moisture-proof coating to facilitate flow and reduce the risk of 'caking'.

3.3 Class C beads (intermix)

Class C beads are mixed into thermoplastic road-marking material by the manufacturer prior to application, and are intended to provide retroreflectivity throughout the life of the marking. These beads should be intermixed at a rate of not less than 20% by mass. These beads may also be used for surface applications to a wet film of pavement marking to provide initial retroreflectivity. These beads should be applied on a smooth substrate. A nominal rate of 350 G/m² may be appropriate, while a coarse surface substrate usually requires a higher rate of application to achieve the required level of retroreflectivity.



NOTE: These beads are not moisture-proof coated, and if used for surface applications, could ‘cake’ during handling.

3.4 Class D beads (large wet-weather beads)

Class D glass beads are applied under gravity or pressure as a surface application to a wet film of pavement marking to provide initial retroreflectivity. These beads should be applied on a smooth substrate. A nominal rate of 500 G/m² may be appropriate, while a coarse surface substrate usually requires a higher rate of application to achieve the required level of retroreflectivity.

NOTE: These beads have no moisture-proof coating and are, therefore, also suitable for intermixing into thermoplastic road-marking material to provide retroreflectivity in both dry and wet conditions throughout the life of the marking. These beads should be intermixed at a rate of not less than 20% by mass.

4 Size

Bead sizes shall comply with the size distribution requirements of Table

SIZE DISTRIBUTION FOR GLASS BEADS

Sieve size, µm	Glass Bead Type			
	A Percent RETAINED by mass	B Percent PASSING by mass	C Percent RETAINED by mass	D Percent PASSING by mass
1700				100
1400				95-100
1300			Trace	
1180			0-3	80-95
1000				10-40
850		100	5-20	0-5
710				0-2
600	0	90-100		
425	10-30	35-75	65-95	
300	40-60	15-45		
212	20-40			
150		0-5		
108				
75		0-1		
Pan	0-10		0-10	

Type B, C, D above are available in 2 grades:

Standard grade

HR or High Retroreflectivity Grade: BHR, CHR, DHR