

The following tables provide guidance on the recommended binder mixing and compaction temperatures for Road Science's asphalt binder products.

These temperatures are provided as a general reference to support the laboratory mix design process and the optimal performance during production and paving.

NZTA M10, M27, and M32

Asphalt binder product	Mixing temperature (°C)	Site compaction temperature (°C)	Lab compaction temperature (°C)
Standard Bitumen			
PG52S	140 - 145	129 - 134	129 - 134
PG52H	145 - 151	134 - 139	134 - 139
PG52V	150 - 155	139 - 144	139 - 144
PG52E	153 - 159	143 - 148	143 - 148
PG58S	147 - 153	136 - 140	136 - 140
PG58H	151 - 156	140 - 145	140 - 145
PG58V	152 - 157	142 - 146	142 - 146
PG64S	152 - 157	142 - 146	142 - 146
PG64H	155 - 160	142 - 149	145 - 149
Speciality Binders			
BarrierBind	150 - 170	135 - 155	155
BioBind	Use temperatures as for the specific standard bitumen PG grade of BioBind		
EME2 15/25	187 - 190	140 - 150	177 - 181
FlexiBind	170 - 185	130 - 150	150
FlexiPlus Bind	170 - 185	130 - 150	150
FlexiMax Bind	170 - 185	130 - 150	150
ResistaMax Bind	170 - 185	130 - 150	150

Mixing + Compaction Temperatures

NZTA P11

Asphalt binder product	Mixing temperature (°C)	Site compaction temperature (°C)	Lab compaction temperature (°C)
Standard Bitumen			
PG52H	109 - 112	97 - 100	97 - 100
PG52V	115 - 118	103 - 106	103 - 106
PG52E	120 - 123	109 - 112	109 - 112
PG58H	116 - 120	105 - 108	105 - 108
PG58V	120 - 123	109 - 112	109 - 112
PG64H	122 - 125	110 - 114	110 - 114
Speciality Binders			
EpoxyBind	125 - 130	110 - 120	120
FlexiBind	130 - 150	110 - 120	120
FlexiPlus Bind	130 - 150	110 - 120	120
FlexiMax Bind	130 - 150	110 - 120	120

Methodology

Binder	Method of temperature determinations	Binder reference
Standard bitumen	Viscosity requirements in Asphalt Institute MS-2	MTM-03/25
Speciality binders	Supplier determined based on laboratory and field data	N/A

Important considerations - Laboratories

A recommended approach to designing with non-standard binders is to develop the base design using a standard bitumen to establish the reference density properties. Then a temperature compaction ladder is performed using the non-standard binder to identify the temperature which matches the base design density. This is the compaction temperature that should be used.

Important considerations - Asphalt plants / paving

The above tables serve as a general guide. Actual binder mixing and compaction temperatures will depend on production and placement trials, which should account for the following factors:

Transport requirements	The distance and time between mixing and paving may influence temperature adjustments.
Paving conditions	Weather, ambient temperature, and site-specific conditions can affect the appropriate compaction temperature.
Material variability	Binder types, aggregates, and additives may require tailored adjustments to achieve desired results.

Mixing + Compaction Temperatures

In the asphalt mixing facility, the required mixing temperature can best be defined as the temperature at which the aggregate can be sufficiently dried and uniformly coated.

The compaction temperature for an asphalt mix should be based on the ability of the compaction equipment to achieve adequate in-place density.

**For additional support or technical advice,
please contact your Road Science
representative.**

Need more information? At Road Science, we're committed to providing innovative solutions backed by engineering expertise. If you have any questions about this product, need technical guidance, or want to discuss how it fits your specific project needs, our team is here to help. Contact us today for expert advice and tailored support. Contact us via **0800 180 200** or visit our website at **roadscience.co.nz** to learn more.

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