

TECHNICAL DATA SHEET | AUSTRALIAN SI FORMAT

Kontain Spec Liner HDPE Smooth

GM13 Series | Smooth black geomembrane | 1.0-3.0 mm

KHDPE-GM13 | Revision C | 9 September 2026 | Supersedes Revision B, 9 September 2026

Product description. Spec Liner HDPE Smooth is Kontain's high-density polyethylene geomembrane for water, waste, mining and civil containment. **This TDS covers smooth black sheet only**, specified to comply with GRI-GM13 Revision 19 in nominal thicknesses from 1.0 to 3.0 mm. The tables state specification requirements; supplied-material compliance is supported by production-lot certification and manufacturing quality control (MQC) reports.

THICKNESS RANGE	NOMINAL WIDTHS	ROLL LENGTH	MANUFACTURE
1.0-3.0 mm	7.5 or 8.0 m	Made to order	Blown film / flat die

Mechanical properties by nominal thickness

Smooth black sheet: test-method minimum averages, not statistical MARV. Tensile: ASTM D6693 Type IV; tear: ASTM D1004; puncture: ASTM D4833.

Nominal thickness (mm)	Yield strength (kN/m)	Break strength (kN/m)	Yield elongation (%)	Break elongation (%)	Tear resistance (N)	Puncture resistance (N)
1.00	15	27	12	700	125	320
1.25	18	33	12	700	156	400
1.50	22	40	12	700	187	480
2.00	29	53	12	700	249	640
2.50	37	67	12	700	311	800
3.00	44	80	12	700	374	960

Thickness - ASTM D5199: minimum average equals nominal thickness; the lowest of ten individual measurements must be at least 90% of nominal. This does not permit the whole sheet to be supplied 10% below nominal.

Minimum MQC frequencies: thickness per roll; tensile every 9,000 kg; tear and puncture every 20,000 kg. Tensile averages use five specimens in each of the machine and cross-machine directions.

Typical roll lengths by thickness

Nominal thickness (mm)	1.00	1.50	2.00	2.50	3.00
Typical roll length (m)	210	140	105	84	70
Area at 7.5 m width (m ²)	1,575	1,050	787.5	630	525
Area at 8.0 m width (m ²)	1,680	1,120	840	672	560

1.25 mm rolls: length made to order. All roll lengths are fully customisable. The table provides typical planning sizes, not fixed limits or stocked sizes. Confirm width, length, roll mass and loading for each order; production and handling constraints apply.

Production choice: blown film is the current standard HDPE route. Flat-die extrusion is available by request. Confirm usable width and the selected grade for the nominated line before manufacture.

Durability, formulation and quality control

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The following requirements apply to the standard smooth black GM13 grade only. Optional smooth formulations and constructions are outlined on page 3; textured products require a separate TDS.

Property	Test method	Requirement	Minimum MQC frequency
Formulated sheet density	ASTM D1505 / D792	$\geq 0.940 \text{ g/cm}^3$	90,000 kg
Stress crack resistance (SCR)	ASTM D5397 Appendix SP-NCTL	$\geq 500 \text{ h}$	Per GRI-GM10
Carbon black content	ASTM D4218	2.0-3.0%	9,000 kg
Carbon black dispersion	ASTM D5596	Ten views: nine in Category 1 or 2; no more than one in Category 3	20,000 kg
Oxidative induction time (OIT)	ASTM D8117 / D5885	Standard OIT $\geq 100 \text{ min}$ or HP-OIT $\geq 400 \text{ min}$	90,000 kg
Oven ageing at 85°C: retained OIT after 90 days	ASTM D5721 with D8117 / D5885	Standard OIT $\geq 55\%$ or HP-OIT $\geq 80\%$	Each formulation
UV resistance: retained HP-OIT after 1,600 h	ASTM D7238 with D5885	HP-OIT $\geq 50\%$; standard OIT is not recommended for this assessment	Each formulation

GRI-GM13 permits either OIT method for the applicable requirement. Where the project requires both methods, state this in the order. D1603 or D6370 may be used for carbon black content where an appropriate correlation to D4218 is established.

Formulation, traceability and release

Control	Supply requirement
Resin and formulation	Virgin polyethylene resin; no post-consumer resin. Resin density is generally $\geq 0.932 \text{ g/cm}^3$ and melt index $< 1.0 \text{ g/10 min}$. Any similar, clean HDPE rework must remain within the GM13 limit of 10% and the agreed order specification.
Traceability and MQC	Identify each roll by number, production lot, thickness, width, length and area. Link the roll register and packing list to the applicable MQC results and formulation records.
Release documentation	Provide a certificate of conformance and production-lot MQC reports for the ordered grade. Confirm the project specification, test methods, sampling frequencies and acceptance criteria before manufacture.

Optional independent testing through TRI in China

Independent sampling from the factory production line and laboratory testing can be arranged through TRI in China. The additional fee can be included in the material supply price to demonstrate performance against the agreed specification.

Agree factory access, sample selection, roll identification, test scope, frequency and turnaround before manufacture. Testing may be allocated within TRI's laboratory network. The service supplements factory MQC; results apply to the sampled material and tests performed.

Compliance basis: GRI-GM13 Revision 19, 11 June 2025, Table 1(b) for smooth HDPE. This TDS is not a batch certificate or independent certification of every roll. Field seams require separate qualification and testing under the applicable GM13 Appendix A and the project construction quality assurance (CQA) plan.

[GRI-GM13 specification](#) | [TRI in-plant sampling overview](#)

Smooth HDPE options, packaging and handling

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Smooth Spec Liner can be configured around the project's exposure, installation and verification requirements. The options below are selected and priced separately; confirm the exact formulation, manufacturing route and variant data before ordering.

Option	Available specification route and selection notes
Higher SCR	Enhanced stress crack resistance can be specified for demanding containment applications. Agree a minimum SP-NCTL value in hours and supporting test evidence for the exact formulation.
Higher OIT / HP-OIT	Enhanced stabiliser packages are available for assessment against the project exposure. Specify initial and retained OIT / HP-OIT requirements; these index tests do not alone establish service life or chemical compatibility.
White and other colours	White-faced and other colour options can be considered for the project. Confirm layer construction, pigmentation, UV performance and suitability for the intended chemical and temperature exposure.
Conductive construction	Conductive-layer options for compatible electrical leak-location testing are subject to manufacturing confirmation. Agree layer construction, electrical properties, continuity and the proposed test method.
Custom roll configuration	Select 7.5 m or 8.0 m widths and made-to-order lengths to suit the installation layout. Blown film or flat-die extrusion can be nominated, subject to the selected configuration and production programme.

Scope and variants: this TDS specifies smooth black HDPE. Coloured and conductive smooth constructions require confirmed variant and layer-specific data. Textured products are outside this TDS and require a separate specification. An enhanced property does not by itself establish GM42 compliance.

Plastic cores and lifting provisions

Standard supply includes heavy-duty plastic cores with **152 mm internal diameter and 10 mm wall thickness**, end caps and high-strength woven lifting slings at both roll ends. Confirm the final core dimensions, marked lifting capacities and actual packed roll mass before handling.

Use a suitable spreader beam, rated slings or an approved mandrel arrangement. Keep unprotected forks clear of the sheet. Store rolls on a firm, dry surface, secure against movement and protect from mechanical damage. Container and road payload limits govern the final loading schedule.

Installation and compatible accessories

Deploy onto an accepted subgrade and weld using qualified project procedures. Matching-resin HDPE welding rod and PolyLock-type concrete embedment profiles can be supplied with the liner. Confirm rod diameter, profile geometry and connection details for the works.

What to specify when ordering

Nominal thickness; smooth surface; black or a separately specified colour / conductive construction; required SCR and OIT / HP-OIT grade; width and roll-length schedule; blown film or flat die; packaging and delivery limits; and any independent testing or project CQA requirements.

Product selection remains subject to project design and exposure assessment. Index properties and optional enhancements do not replace evaluation of chemical compatibility, interface stability, protection layers, installation quality or the intended service conditions.