AIS Stonewool™ Wired Mat (WM)

AIS Stonewool™ Wired Mat is a versatile, non-combustible stonewool mat insulation stitched onto steel wire mesh with matching binding wire — available with both stainless-steel and galvanised mesh and wire. It is designed for a wide range of industrial applications where high demands are made on the temperature resistance of the insulation, and where high temperature is combined with vibration or a high fire-resistance requirement.

The flexible stitched-mat format wraps tightly around pipework, vessels and equipment, including irregular and curved surfaces, and retains its integrity in service. Available in three density grades (80, 100 and 128 kg/m^3) with service temperatures up to 750 °C, the material complies with the requirements of international standards including ASTM C592 Type I, II and III.



AIS Stonewool™ Wired Mat installed to industrial pipework, shown with foil-faced finish.

TYPICAL APPLICATIONS

- Thermal and acoustic insulation of industrial installations exposed to the environment — outdoor industrial pipework, reactors and furnaces
- Petrochemical plants and refineries — large process pipework, tanks, vessels, boilers and ducts
- High-temperature applications combined with vibration, where a stitched wired mat retains its integrity
- Fire protection of plant and equipment suited to non-combustible stonewool
- Sound attenuation blankets to plant, ducts and enclosures
- Irregular and curved surfaces — the flexible mat wraps tightly around equipment

Confirm the operating temperature, mesh/wire selection (stainless or galvanised), facing and any fire-rating requirements of the application with AIS before specification.

FEATURES & BENEFITS

- **Non-combustible** – stonewool core to AS 1530.1 (CSIRO Assessment FCO-3526 — all WM grades within scope); Euroclass A1 (EN 13501-1)
- **Stitched on steel mesh** – stonewool mat stitched to galvanised or stainless-steel hexagonal wire mesh (25.4 mm pattern) with matching binding wire
- **Three density grades** – 80 / 100 / 128 kg/m^3 to suit service temperature and mechanical demands
- **High service temperature** – up to 650 °C (80/100 WM) and 750 °C (128 WM) to ASTM C411/C447
- **Low surface burning** – ASTM E84: Flame Spread Index 0, Smoke Developed ≤25
- **Corrosion control** – chloride content conforms to the stainless-steel corrosion specification (ASTM C692/C795); ≤10 ppm chloride option available
- **Moisture resistant** – moisture absorption <1% by weight (ASTM C1104); water absorption <1 kg/m^2 (EN 1609); water-repellent grade (>99%) available
- **Standards compliance** – meets the requirements of ASTM C592 Type I, II and III; facings of aluminium foil or glass tissue available

PRODUCT RANGE & DIMENSIONS

Product	Nominal Density (kg/m^3)	Mesh / Binding Wire	Thickness (mm)	Roll Sizes — Length × Width (mm)
AIS Stonewool 80 WM SS/G	80	Stainless steel (SS) or galvanised (G) — 25.4 mm hexagonal mesh	25 / 50 / 75 / 100	All thicknesses available in both 1200 mm and 600 mm widths Roll length varies by thickness (e.g. 50 mm: 5000 · 75 mm: 4000) — confirm with AIS
AIS Stonewool 100 WM SS/G	100			
AIS Stonewool 128 WM SS/G	128			

Other thicknesses may be available on request. Standard galvanised mesh is gauge 24# or 22# wire in a 1 inch (25.4 mm) hexagonal pattern; stainless-steel mesh and binding wire available. When specifying, state: AIS Stonewool™ 80/100/128 WM SS/G, thickness × width × length (mm). Contact AIS for product codes and other sizes.

THERMAL PERFORMANCE

Product	Density (kg/m³)	Thermal conductivity, λ (W/m·K) at mean temperature — ASTM C177						Max. Service Temp (°C) [1]
		50 °C	100 °C	150 °C	200 °C	250 °C	300 °C	
AIS Stonewool 80 WM	80	0.032	0.038	0.054	0.058	0.069	0.081	650
AIS Stonewool 100 WM	100	0.032	0.038	0.053	0.057	0.067	0.080	650
AIS Stonewool 128 WM	128	0.030	0.035	0.053	0.057	0.066	0.078	750

[1] Maximum service temperature to ASTM C411/C447. As industry practice, a recommended continuous service temperature of approximately 100 °C below the maximum may be adopted for design. Linear shrinkage ≤4.0% at maximum service temperature (ASTM C356).

FIRE PERFORMANCE

Characteristic	Test Method	Result / Status
Combustibility — stonewool core	AS 1530.1-1994	Non-combustible — CSIRO Assessment FCO-3526 (density 40–175 kg/m³, thickness 10–200 mm — all WM grades within scope; valid to 30 Nov 2028); supported by CSIRO Test FNC13104
Reaction to fire	EN 13501-1	Euroclass A1
Surface burning characteristics	ASTM E84	Flame Spread Index: 0 · Smoke Developed: ≤25
Early fire hazard	AS/NZS 1530.3:1999	Stonewool: 0, 0, 0, 1 unfaced — CSIRO Assessment FCO-3532 (40–175 kg/m³, 10–200 mm; valid to 28 Feb 2029)
Group Number	AS 5637.1 / NCC 2022	Not required — non-combustibility is the higher classification
Melting point (stonewool)	—	>1000 °C; steel mesh and wire are non-combustible

PHYSICAL PROPERTIES

Property	Test / Reference Standard	Result
Material	—	Basalt stonewool mat stitched on steel wire mesh with steel binding wire
Nominal density	EN 1602	80 / 100 / 128 kg/m³ by grade
Linear shrinkage (at max. service temperature)	ASTM C356	≤ 4.0%
Chloride content	ASTM C692 / C795	Conforms to the stainless-steel corrosion specification; ≤10 ppm chloride option available
Moisture absorption	ASTM C1104 / C1104M	< 1% by weight
Water absorption (partial immersion)	EN 1609	< 1 kg/m² (water-repellent grade >99% available)
Odour emission	ASTM C665	No perceptible odour present
Fungi resistance	ASTM C1338	Does not encourage growth of fungi
Composition	—	No asbestos used in manufacture; inorganic — will not rot or attract vermin
Standards compliance	ASTM C592	Meets the requirements of Type I, II and III

FACINGS

AIS Stonewool™ Wired Mat can be supplied faced with aluminium foil or glass tissue for radiant, vapour or finish requirements. The Euroclass A1 / non-combustible designation applies to the unfaced material; confirm facing selection against the application's operating temperature and any fire requirements with AIS.

SUPPORTING DOCUMENTATION

Document	Issuer	Scope
Assessment FCO-3526	CSIRO	Non-combustibility to AS 1530.1 for NCC A5G3(d) — 40–175 kg/m³, 10–200 mm; valid to 30 Nov 2028
Assessment FCO-3532	CSIRO	AS/NZS 1530.3 indices 0,0,0,≤2 (unfaced 0,0,0,1); valid to 28 Feb 2029
Certificate of Test FNC13104	CSIRO (NATA No. 165)	AS 1530.1-1994 combustibility — AIS Stonewool: NOT deemed combustible
Manufacturer's data	Manufacturer	Declared thermal conductivity (ASTM C177), service temperature (ASTM C411/C447), EN 13501-1 Euroclass A1, ASTM E84, moisture and chloride data
Safety Data Sheet (SDS ref 3323-1 V2)	AIS	Handling, PPE and disposal guidance

Copies available on request from AIS — sales@ais-group.com.au. No CodeMark certificate or third-party appraisal is currently held for this product.

HANDLING, STORAGE & INSTALLATION

Packaging & Storage

- Supplied in roll form, shrink-wrapped in polyethylene for handling, transport, storage and identification
- Store indoors or under a waterproof covering; do not place directly on the floor — keep clear of ground moisture
- Protect from mechanical damage and prolonged compression

Installation

- Cut to the required length and wrap tightly around the equipment
- Butt the edges of each mat closely together to eliminate gaps, and stitch the joints using steel wire
- Secure to the equipment with steel bands, or pins with speed clips
- Match the mesh and binding wire (stainless or galvanised) to the service environment and substrate
- Confirm operating temperature and any facing limits against the application before installation

HEALTH & SAFETY

AIS stonewool is manufactured from bio-soluble mineral wool fibres and does not contain asbestos. The mechanical effect of fibres in contact with skin may cause temporary itching — rinse in cold water before washing. Wire mesh edges can be sharp — wear cut-resistant gloves when handling and stitching. Follow the product SDS: cover exposed skin, use gloves, eye protection and a dust mask when cutting, and ventilate the work area.

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