

## CAPABILITY GUIDE MECHANICAL TESTING

TestSafe Australia has an established reputation in mechanical testing, accident investigations, wire rope testing and expertise, and consultancy services.

Our testing services include the following (contact us for tests not listed below). For wire rope testing capabilities, see separate Capability Guide.

### TESTING

#### *Hydrostatic tests*

- Pressure tests up to 35 Mpa.
- Pressure test of hosing to AS 1180.5.1999.

#### *Containers and packaging*

- Testing of drums, containers and packaging to Australian Dangerous Goods Code, AS 2905 and AS 2906.

#### *Electric cables*

- Fire testing of cables for categories A, B, C of AS/NZS 1660.5.1, IEC60332-3 and BS 4066: Part 3.
- Smoke density tests to AS/NZS 1660.5.2, IEC 61034 and BS 7622:Part 2.

#### *Fire testing*

- Smoke density testing of materials to BS 6853.
- Fire testing of hoses to AS 1180.10B and SAEJ 1942.

#### *Fire Extinguisher testing*

- Tests to AS/NZS 1841.1 including component materials, organic linings, operating head impact, tests for plastic materials, etc.
- Compaction tests on dry chemical extinguishers to AS/NZS 1841.5.
- Discharge tests.

#### *Accident investigations*

- Examination and testing of equipment involved in accidents to assist in determination of cause.
- Provision of expert witnesses for court cases.

#### *Hardness testing*

- Shore hardness tests on rubber materials.

#### *Conveyor belt testing*

- Tests to AS 1332, AS 1333, AS 1334 methods 2 to 12, AS 1683.11, BS 2050 Method A4.1 and AS/NZS 4606.
- Testing of belting accessories such as scrapers, pulley and idler laggings, skirtings, splices, and liners, for fire-resistant and antistatic (FRAS) properties.

#### *Load Testing of Lifting Equipment*

- Proof tests on crane hooks, slings, shackles, lifting beams, turnbuckles, etc. to various standards.
- Tests on vehicle and trolley jacks, support stands and ramps to Australian standards.
- Proof and ultimate loads on assemblies and components.

#### *Ladders, Railings and Fences*

- Testing of ladders to AS 1892.
- Hand rails and fences to AS 1657.
- Roof edge protection systems to AS/NZS4994.1.
- Safety attachment anchorages to AS/NZS 1891.3.

#### *Scaffolding*

- Load tests on scaffold assemblies and components to AS/NZS1576 parts 1 to 3.
- Testing of guard rails and components.

#### *Internal combustion diesel engines*

- Type testing of diesel engine systems to AS/NZS3584.1-.2
- Testing of fuel blends for power and emissions.
- Engine dynamometer tests for engine characteristics; exhaust emissions, surface temperatures, etc.

#### *Hazardous area equipment testing*

- Testing of equipment for use underground in coal mines, impact tests on light metal coatings, spark ignition tests on cutting picks, vehicle braking tests, proof tests on canopies, flame transmission tests on flame arrestors, etc.
- Fire resistant tests of hydraulic fluids, FRAS tests of hoses, brattice cloths and non-metallic materials, fire tests to BS 6853
- Type testing of fireproof and explosion-protected engines.

*Cont'd over....*

## Facilities

**400 kW eddy current dynamometer** - with fuel metering and computer data acquisition systems. The dynamometer can be set at constant speed, constant torque and variable modes. Exhaust gas analysis is available by arrangement with a NATA accredited laboratory.

**Universal testers** – three Avery Universal testers of 2,800 kN, 500 kN and 66 kN capacities are available for tensile and compression tests, with a variety of grips for wire ropes, rubber samples, etc. Large structures can also be loaded by the fabrication of special jigs and attachments, if required.

**Environmental chambers** – for use during testing of extinguishers, rubber materials, containers, packaging and cigarette lighters within the range – 40 °C to 200 °C, and 20% to 95% RH.

**Flameproof testing** – A flameproof chamber with a volume in excess of 1 m<sup>3</sup> is available for carrying out explosion tests on engine components and spark ignition tests on cutting picks. Included with this facility are gas mixing and analysis equipment, gas ignition and pressure recording instrumentation, and overpressure hydrostatic test chamber.

**Fire Extinguisher testing** – In addition to the fire grounds for carrying out Class ‘A’ and some ‘B’ rating tests, our laboratory also has the equipment to carry out testing to AS/NZS 1841.1 such as component materials impact (for organic linings and plastic heads), organic lining continuity, discharge after conditioning and impact, and pressure gauge assessments. These tests, including powder compactions to AS/NZS 1841.5, are usually performed as part of SAI Global certification.

**Conveyor Belt testing** – Our facilities for conveyor belting testing include a fire gallery, drum friction test rig, electrical resistance and laboratory flame equipment, tensile machines for tear, belt and cover tensile and steel cord tensile and pull out tests. We carry out type tests for underground coal mining applications to AS/NZS 4606, and other tests to parts of AS 1334. Belting accessories such as scrapers, skirting, liners and lagging materials can be tested for fire-resistant and antistatic properties.

**Electrical cable fire tests** - Dedicated facilities for these tests include a fire tower and a 3 m<sup>3</sup> smoke chamber for tests to AS 1660.5.1 and AS 1660.5.2 and related overseas and international standards.

**Other tests** can also be carried out with prior arrangement.

TestSafe Australia is an independent testing authority operating under a quality management system to ISO 9001:2000 and is recognized for the majority of its work as a NATA registered laboratory.

### ***For further information please contact***

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