

**MATERIAL SAFETY DATA SHEET (MSDS)****SECTION 1: PRODUCT IDENTIFICATION**

<b>Product Name:</b>	Speedwall®	<b>CAS #:</b>	None allocated
<b>Generic Name:</b>	None	<b>Formula:</b>	Not applicable
<b>Chemical Name:</b>	Not applicable	<b>Hazard Label:</b>	Not applicable
<b>Manufacturer:</b>	Speedwall® (NZ) Limited	<b>Telephone:</b>	+64-7-849-7062
<b>Address:</b>	PO Box 20182 Te Rapa Hamilton New Zealand	<b>Mobile:</b>	+64-21-402-888
		<b>Email:</b>	<a href="mailto:speedwall@clear.net.nz">speedwall@clear.net.nz</a>

**Appearance and odour:**

Speedwall® is a building panel consisting of two seamed steel panels filled with an inner layer of aerated concrete. It has no particular odour. The panels' dimensions are 77 to 120 mm thick, 110 to 300 mm wide and up to 7 metres long.

**Uses:**

Used in the construction industry as structural walls instead of pre-cast concrete, brickwork, aerated thermal blocks or fire-rated stud walls.

**SECTION 2: INGREDIENTS**

<b>Ingredient Name</b>	<b>CAS #</b>	<b>%</b>	<b>Exposure Limits NOHSC[1003(1995)]</b>
Washed fine sand	-	< 20%	Not applicable for intact products.
Portland cement	65997-15-1	< 50%	
Detergent-based foaming agent	-	< 1%	
Polypropylene filaments	9003-07-0	< 1%	
Galvanized steel	-	< 20%	
Water	-	to 100%	
<b>Dust from this product contains:</b>			There is no specific Exposure Standard for dust from Speedwall products, but the following should apply:
Crystalline silica (quartz)	14808-60-7	<30%	(i) crystalline silica (quartz) 0.2 mg/m <sup>3</sup> time-weighted average (TWA) - measured

Ingredient Name	CAS #	%	Exposure Limits NOHSC[1003(1995)]
			as repairable particulates
Portland cement	65997-15-1	<10%	(ii) Portland cement 10 mg/m <sup>3</sup> TWA;- measured as inspirable particulates
Dusts not otherwise classified (NOC)			(ii) dust (NOC) 10 mg/m <sup>3</sup> TWA;- measured as inseparable particulates
<b>Speedwall® recommendation:</b> Keep exposures as low as practicable with the aim of keeping dust exposures below 2.0 mg/m <sup>3</sup> measured as inseparable dust, and below 0.1 mg/m <sup>3</sup> measured as repairable quartz.			
<b>Note:</b> Potential exposures to dust will occur only when power tools or machinery are used on the product such as sawing, drilling or routing, or in poorly maintained workshops. The polypropylene filaments used in this product are inert materials made of coarse, nontransferable diameters (>25 microns).			

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### SECTION 3: HAZARD IDENTIFICATION

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#### OVERVIEW

Speedwall® panels are robust building materials and in their intact state do not pose any health risks apart from the manual handling injuries and physical trauma (cuts and abrasions) similar to that from other concrete based building materials. The dust generated when the panels are cut or machined are similar to those from other concrete products.

Occupational exposure to dust from this product has been classified as hazardous according to the criteria of the National Occupational Health and Safety Commission (NOHSC). Inhalation of excessive amounts of dust may cause temporary upper respiratory irritation and/or congestion; and irritation of the eyes and skin. Repeated inhalation of dust containing crystalline silica may cause bronchitis, silicosis (scarring of the lung) and lung cancer, and increases the risk of renal (kidney) disease and scleroderma (connective tissue disease). The dust is alkaline and a strong irritant to the eyes, skin and upper respiratory tract.

#### Potential Health Effects

##### Acute (short term) Health Effects:

The health effects due to dusts from Speedwall® are those due to an alkaline irritating dust.

##### Swallowed:

Unlikely under normal conditions. Swallowing the dust may cause abdominal discomfort.

##### Eye:

The dust may be irritating and corrosive to the eyes resulting in redness, watering and ulceration of the surface of the eye (cornea).

**Skin:**

Speedwall® dust may be irritating and abrasive to the skin causing itching, redness and dermatitis in some people. The dust is not absorbed through the skin.

**Inhaled:**

Inhalation of the dust may irritate the nose, throat and respiratory tract resulting in sneezing, coughing and increased mucus.

**Chronic (long term) Health Effects:**

Repeated inhalation of dust may result in excessive mucus and coughing. Repeated inhalation of crystalline silica, a component of Speedwall® dust, may cause bronchitis, silicosis (scarring of the lung) and lung cancer, and increases the risk of scleroderma (connective tissue disease) and renal (kidney) disease

Occupational exposure to crystalline silica dust has been evaluated by the International Agency for Research on Cancer (IARC) as group 1, carcinogenic (cancer causing) to humans.

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**SECTION 4: FIRST-AID MEASURES**

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**Swallowed:**

If dust is swallowed, give water to drink. Seek medical attention if any abdominal discomfort.

**Eyes:**

Flush eyes thoroughly with plenty of water for at least 15 minutes. If symptoms persist seek medical attention.

**Skin:**

Wash thoroughly with mild soap and water. Remove clothing if contaminated with dust.

**Inhaled:**

Leave the dusty area.

**First-aid facilities:**

Provide eye-wash facilities.

**Notes to doctor:**

Treat symptomatically.

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**SECTION 5: FIRE FIGHTING MEASURES**


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**Unusual Fire / Explosion Hazards:**

Speedwall® products are non-flammable. Use fire extinguishing media as for surrounding materials.

<b>Flammable Properties and Explosive Limits:</b>			
<b>Flash Point:</b>	not applicable	<b>Lower Explosive Limit (LEL):</b>	not applicable
<b>FP Test Method:</b>	not applicable	<b>Upper Explosive Limit (UEL):</b>	not applicable
<b>Flame Classification:</b>	not determined	<b>Autoignition Temperature:</b>	not determined
<b>Flame Propagation:</b>	not determined	<b>Decomposition Temperature:</b>	not applicable

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**SECTION 6: ACCIDENTAL SPILL AND RELEASE MEASURES**


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**Spills and disposal:**

Offcuts, general waste material and dust should be collected for disposal with other construction materials in accordance with local authority guidelines. Dust should be wetted down with water to reduce generation of airborne dust before clean up.

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**SECTION 7: HANDLING AND STORAGE**


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**Handling and storage:**

No special transport or storage requirements are considered necessary.

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**SECTION 8: EXPOSURE CONTROL AND PERSONAL PROTECTION**


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**Engineering controls:**

Keep exposures as low as practicable with the aim of maintaining airborne dust levels below 2.0 mg/m<sup>3</sup> time-weighted average (TWA), measured as inseparable dust, and below 0.1 mg/m<sup>3</sup> (TWA) measured as respirable quartz. All work with Speedwall® products should be carried out in such a way as to minimise exposure to dust. Whenever practicable, the generation of dust on construction sites should be reduced by supplying Speedwall® panels in pre-cut ready to install forms, and any cutting or machining should be done in segregated well ventilated work areas. Machining, sawing, drilling or routing of the panels should be done with equipment fitted with local exhaust ventilation devices capable of removing dust at source. Work areas should be kept clean by regular vacuuming or wet sweeping.

**Ventilation:**

Local exhaust ventilation should be provided at areas of cutting and machining to remove airborne dust. General dilution ventilation should be provided as necessary to keep airborne dust below the recommended concentrations. The need for ventilation systems should be evaluated by a professional industrial hygienist, while the design of specific ventilation systems should be conducted by a professional engineer.

**Special considerations for repair and maintenance of contaminated equipment:**

Use personal protective equipment as discussed below. Where possible, vacuum all equipment before repair and maintenance to remove excessive dust.

**Personal hygiene:**

Do not smoke whilst exposed to Speedwall® dust. Wash skin with mild soap and water after working with this product.

**Eye protection:**

Non-fogging dust resistant safety goggles, glasses (*AS/NZS 1336: Recommended Practices for Eye Protection in the Occupational Environment*) or face shield should be worn if there is a risk of dust getting into the eye, such as when using power tools.

**Skin protection:**

Wear standard duty gloves (*AS 2161: Industrial Safety Gloves and Mittens*), loose comfortable clothing, and boots. Long-sleeved shirts and long trousers are recommended if skin itching occurs. Wash skin with mild soap and water after working with these products. Wash work clothes regularly.

**Respiratory protection:**

Avoid breathing dust. Wear a P1 or P2 particulate disposable or cartridge dust mask (respirator) conforming with Australian Standards *AS/NZS 1715: Selection, Use and Maintenance of Respiratory Protective Devices* and *AS/NZS 1716: Respiratory Protective Devices when Exposed to Dust*. These Standards should be followed in the selection, fit-testing, use, storage and maintenance of the dust masks.

**Smoking and other dusts:**

Inhalation of airborne particles from other sources, including those from cigarette smoke, may increase the risk of lung disease. All storage and work areas should be smoke free zones and other airborne contaminants kept to a minimum. Smoking increases the risk of bronchitis, silicosis (scarring of the lung) and lung cancer in persons exposed to crystalline silica dust.

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**SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES**


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<b>Boiling Point (°F/°C):</b>	not applicable
<b>Evaporation Rate (Butyl acetate = 1):</b>	not applicable
<b>Melting Point:</b>	not applicable
<b>pH:</b>	8 - 11
<b>Saturation in Air (%):</b>	not applicable
<b>Solids Content:</b>	not applicable
<b>Specific Gravity (Water = 1):</b>	0.6
<b>Vapor Density (Air = 1):</b>	not applicable
<b>Vapor Pressure:</b>	not applicable
<b>Viscosity:</b>	not applicable
<b>VOCs (g/liter):</b>	not applicable
<b>Volatile by Volume (%):</b>	not applicable
<b>Water Solubility (%):</b>	insoluble

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**SECTION 10: STABILITY AND REACTIVITY**


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**Reactivity:**

This product is not reactive.

**Hazardous Decomposition Products:**

Speedwall® panels are non-flammable, do not support combustion of other materials, and do not generate hazardous decomposition products.

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**SECTION 11: TOXICOLOGICAL AND EPIDEMIOLOGICAL DATA**


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Speedwall® panels are robust building materials and in their intact state do not pose any health risks apart from the manual handling injuries and physical trauma (cuts and abrasions) similar to that from other concrete based building materials. The dust generated when the panels are cut or machined are similar to those from other concrete products.

**Acute Effects:**

The dust, which may be generated during manual or mechanical cutting, drilling, or other abrading processes may cause temporary irritation of the skin, eyes and upper respiratory system. The symptoms are expected to subside after exposure ceases and are not expected to cause any long-term effects.

**Chronic Effects:**

Repeated over-exposure to crystalline silica dust has been associated with bronchitis and silicosis (scarring of the lung). In some studies effects were seen at cumulative lifetime exposures of 4 mg/m<sup>3</sup>-years<sup>1</sup> (the equivalent of working and breathing in an atmosphere of 0.2 mg/m<sup>3</sup> respirable quartz dust for 20 years). The risk of lung cancer has been associated with occupational

exposures to quartz (crystalline silica). Most of these studies were conducted in the quarrying, mining, pottery and foundry industries.

The International Agency for Research on Cancer (IARC)<sup>2</sup> evaluated crystalline silica in 1996 and concluded that : "crystalline silica inhaled in the form of quartz or cristobalite from occupational sources is carcinogenic to humans (Group 1)". Crystalline silica inhaled in the form of quartz or cristobalite has also been evaluated by the National Toxicology Program in the USA as a human carcinogen.

Studies in rats have found that freshly ground quartz is more toxic in the lung and induces more inflammation than aged quartz.<sup>3</sup> This may explain why relatively short exposures of 6 months to 4 years have resulted in acute silicosis and progressive massive fibrosis in sandblasters<sup>4</sup>.

A Canadian review<sup>5</sup> has found an association between silica exposure in miners and scleroderma, a disease of connective tissue affecting the skin, joints, blood vessels and internal organs. Autoimmune diseases, including rheumatoid arthritis, have also been associated with exposure to crystalline silica in gold miners and granite workers.<sup>6</sup> Researchers also confirmed an increased risk of autoimmune diseases such as rheumatoid arthritis, scleroderma and systemic lupus erythematosus in a case control study of men with silicosis.<sup>7</sup>

End-stage kidney disease has been found in ceramic workers,<sup>8</sup> gold miners<sup>9</sup> and granite workers<sup>10</sup> exposed to crystalline silica.

The polypropylene polymer filaments used in this product are chemically inert and have physical properties that make them non-respirable, ie the fibres are long (18 microns) and relatively thick (25 microns diameter). Polypropylene has been tested in Germany by Professor Pott in the most sensitive animal test systems, and found not to cause cancer or fibrosis (scarring)<sup>11</sup>. The presence of polypropylene particles in the dust from Speedwall® panels will not provide any additional health risks over and above those from the aerated concrete.

#### References:

1. Steenland K, Brown D. Silicosis among goldminers Exposure-response analyses and risk assessment. *Journal of Public Health*, 85: 1372 -1377, 1995.
2. IARC Monographs on the evaluation of carcinogenic risk to humans. Volume 68: Silica, some silicates, coal dust and *para*-aramid fibrils. IARC Lyon France, 1996.
3. Vallyathan V, Castranova V et al Freshly fractured quartz inhalation leads to enhanced lung injury and inflammation: potential role of free radicals. *American Journal of Respiratory and Critical Care Medicine*, 152: 1003-1009, 1995.
4. Morbidity and Mortality Weekly Report/98-05-01. Silicosis mortality in young adults, US.
5. Archer CA, Gordon DA. Silica and progressive systemic sclerosis (scleroderma). Evidence for workers compensation. *American Journal of Industrial Medicine*, 29: 533-538, 1996.
6. Steenland K, Goldsmith DF. Silica exposure and autoimmune disease. *American Journal of Industrial Medicine*, 28: 603-608, 1995.
7. Rosenman KD, Moore-Fuller M, Reilly MJ. Connective tissue disease and silicosis. *American Journal of Industrial Medicine*, 35: 375-381, 1999.
8. Calvert GM, Steenland K, Palu S. End-stage renal disease among silica-exposed gold miners. *Journal of the American Medical Association*, 277(15): 1219-1223, 1997.
9. Rapiti E, Sperati A et al. End-stage renal disease among ceramic workers exposed to silica. *Occupational and Environmental Medicine*, 56: 559-561, 1999.
10. Ng TP, Lee HS. Further evidence of human silica nephrotoxicity in occupationally exposed workers. *British Journal of Industrial Medicine*, 50: 907-912, 1995.
11. Pott F, Roller M et al. Carcinogenicity studies on natural and man-made fibres with the intraperitoneal test in rats. In *Non-occupational exposure to mineral fibres*. IARC Scientific Publications No 90, pp 173-179. IARC. Lyon France, 1989.

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## SECTION 12: ECOLOGICAL INFORMATION

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This product should be used only for its designated purposes, and should not be deposited in watercourses.

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## SECTION 13: DISPOSAL CONSIDERATIONS

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This product is not regulated as a hazardous waste by Australian environmental authorities. Local authority guidelines should be followed in the disposal of waste products and dust.

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## SECTION 14: TRANSPORT INFORMATION

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### Transportation Summary:

This product is not regulated as a dangerous good. No special transport requirements are necessary.

**UN number:** none allocated

**Dangerous goods classification & subsidiary risk:** none allocated

**Hazchem code:** none allocated

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## SECTION 15: REGULATORY INFORMATION

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### Statement of hazardous nature:

Occupational exposure to dust from this product is classified as hazardous according to the criteria of the National Occupational Health and Safety Commission (NOHSC).

### Regulatory information:

The following classification relates to **crystalline silica**, a component of Speedwall® dust.

**Australia-NOHSC:** Not classified as a carcinogen but listed as under review on the List of Designated Hazardous Substances [NOHSC:10005:1999]

**USA-NTP:** category R – reasonably anticipated to be a human carcinogen

**USA-NIOSH:** carcinogen with no further classification

**Germany-DFG:** category 1 carcinogen



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**SECTION 16: HEALTH & SAFETY INFORMATION TO USERS**

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**Speedwall® Health and Safety Warning****SPEEDWALL® PANELS**

- Ingredients:** Steel panels filled with an aerated concrete filler. Dust contains crystalline silica.
- Risk:** Dust from this product may be irritating and corrosive to eyes, skin and respiratory system.  
Repeated inhalation of dust containing crystalline silica may cause bronchitis, silicosis (scarring of the lung) and lung cancer; and may increase the risk of scleroderma (connective tissue disease) and renal (kidney) disease.
- Safety:** Avoid repeated or prolonged dust contact with skin.  
Avoid dust contact with eyes.  
Avoid breathing dust.  
Wear suitable clothing, standard duty gloves (AS 2161), and dust resistant eye protection (AS/NZS 1336) such as goggles or face shield. If machining without adequate dust extraction or if dusty, respiratory protection (particulate dust mask) must be worn (AS/NZS 1715 and 1716). Keep work areas clean by wet sweeping and/or vacuuming.  
Wash work clothes regularly.
- First-aid:** Flush eyes with plenty of water for 15 minutes and seek medical attention.  
Wash skin with soap and water.
- Disposal:** Follow above safety instructions.  
Collect waste and dust for disposal with other construction materials in accordance with local authority guidelines.
- Fire:** Not flammable. Use extinguishing media appropriate for surrounding materials.

Ph +64-7-849 7062. Internet: [enquiries@speedwall.co.nz](mailto:enquiries@speedwall.co.nz)

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**SECTION 17: OTHER INFORMATION and CONTACT POINT**

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Further information may be obtained by contacting your local branch or sales representative.

**Emergency telephone:** +64-7-848 7062

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**Note:** This MSDS has been prepared for Speedwall by Douglas Consulting Australia, an independent consultancy specialising in occupational and environmental health, and safety.

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**MSDS Revision Summary:**

<b>Date</b>	<b>Reason</b>
02/00	NOHSC revision of documentation.