

ScaffGuard

The Smarter, Safer Choice

Scaffold Safety System

INSTALLATION INSTRUCTIONS AND SAFETY INFORMATION

ScaffGuard Installation Instructions

Installation and alteration of ScaffGuards should only be carried out by a qualified and experienced Scaffolders. ScaffGuards have been designed for use with Modular “V” pressing type scaffold.

Prior to attaching Scaffguards

- Ensure the scaffold has been designed and engineered to allow for additional wind loading due to the use of ScaffGuards. In most cases additional tying of the scaffold to the supporting structure will be required. You must consult your engineer for tying and connection details.
- Ensure the scaffold has been erected as designed and engineered.
- Do not install ScaffGuards above the highest tie without your engineers approval
- Handrails must be in place at approximately 1000 mm
- Midrails must be in place at approx 500mm
- ScaffGuards are for material containment and are not designed for use as guard rails or protection
- Kickboards must be able to be fitted on the inside of the working deck scaffold once the Scaffguard is in place.
- If kickboards are to be placed on the exterior of the scaffold they need to be in place on the working decks prior to attaching ScaffGuards
- Avoid attaching ScaffGuards during high winds to prevent ScaffGuards from being blown off the scaffold prior to fixing.
- ScaffGuards should be removed if there is an extreme weather warning involving high winds.
- ScaffGuards will be suited to the majority of scaffold however in some areas traditional containment methods will be better suited and should be used.

Recommended Tools & Equipment

To assist with the installation of the ScaffGuards we recommend the use of the following tools:
Gloves, Side Cutters

Scaffold Face Installation

Attaching The Scaffguard panel to the inside of the working deck can be carried out by one person although we recommend working in pairs. Always work from a full deck of boards. When ScaffGuards are located on site or stored they must be secured to prevent wind from moving scaffGuards before they are securely installed.



Scaffold Face Installation – Handrail Height

Carry ScaffGuards to the working area. When working in pairs multiple ScaffGuards can be carried at a time. Always wear gloves when working with ScaffGuards to avoid sharp edges. Lean the panels against the scaffold in a secure location where they will not be dislodged or moved by wind.



Remove the kickboard on the working deck if it has been put in place. Ensure that the **Midrail** and **Handrail** are installed.



With the top of the ScaffGuard level with the Handrail, Locate the ScaffGuard onto the “V” Pressings. Insert the Tlock at each end of the ScaffGuard to hold it in place.

The front of the ScaffGuard must face towards the working deck. This is the side with the Labeling and ribbing.



In normal conditions the ScaffGuard requires that two cable ties 7.5mm in size are used to attach the ScaffGuard to the Handrail. On a 2.4m ScaffGuard use the tie holes located approximately 700mm from each end. An engineer may require changes to the normal connection points depending on the project.

Insert the cable tie from the inside of the ScaffGuard around the handrail and secure tightly on the inside of the scaffold.



Replace the kickboard to complete the installation.



Repeat this process along the face of the scaffold until the end bay.



ScaffGuard Installation – End Bay

When installing a face panel on an end bay, the midrail ledger may be inserted in place of a Tlock



ScaffGuard Installation – Lap Panel-End Bay

If using ScaffGuards to enclose the end of a 1.2m bay, 1.2m Lap Panels must be used. With the handrail, mid-rail and kickboard in place, slide the Lap Panel in between the kickboards. (the flat end in to the kickboards).

Secure each end with two evenly spaced cable ties.

Note: There are left and right hand panels



Secure the top ScaffGuard from inside the scaffold. Have someone hold the ScaffGuard at an angle and attach two evenly spaced cable ties to the outer edge



Hinge the ScaffGuard to the end of the scaffold and secure the other end with two evenly spaced cable ties.

ScaffGuard – Lap Panel

A Lap Panel can be used to cover gaps in scaffold bays when they occur. Attach Lap Panels with a minimum of four cable ties. Ensure that handrails mid-rails and kickboards are in place on any lap.



ScaffGuard Installation – Full Screen

When installing the upper ScaffGuard to provide a full screen, remove the kickboard from the deck above if it is in place. Locate the ScaffGuard on the “V” pressing 1.5m from the deck and insert the Tlocks.

Note: lettering and ribbing to be facing the inside of the scaffold



Attach two cable ties on the top ledger approximately 700mm in from each end to secure the top of the ScaffGuard.

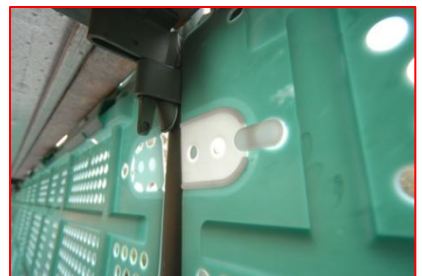


Interlock the two ScaffGuards at handrail height. Insert a cable tie into the overlap interlock, being careful to pass the cable tie through both ScaffGuard panel holes.

Then secure the cable tie. Under normal conditions only the middle two interlocks need to be used.

ScaffGuard Installation – Tie Hole removal

When installing the upper ScaffGuard it may be necessary to remove the tie hole insert to allow a tie tube to be attached to the rear standard. Using a side cutters remove the tie hole plug and Insert the fitting and tie tube. Once a tie tube plug is removed a replacement cap is available to fill the tie tube hole.



Storage

To prolong the use of ScaffGuards store ScaffGuards on a flat level surface. We recommend a maximum of 125 ScaffGuards per stack. The use of suitably sized timber pallets or steel frames is recommended.

When not in use store ScaffGuards out of sunlight to extend the life of you ScaffGuard.

Transportation

Transport ScaffGuards flat on a tray truck. We recommend the use of webbing straps with protectors to prevent damage to the ScaffGuards when tying down.

Ensure the ends of the scaffGuards are protected or secure from any wind generated by truck movement to prevent uplift and folding of the ScaffGuard.

Do not choke with Chains when lifting

Damages

ScaffGuards are made of high impact plastic and will provide years of use if cared for properly. Do not use a ScaffGuard if it becomes brittle or has crack. Inspect for damages prior to use.

ScaffGuard should not be used if the size of any additional holes or damage causes holes to exceed the required minimum size as required by local authorities.

If tying points become damaged there are additional points which may be used. Do not over secure the scaffGuard to the scaffold. Consult your engineer.

Maintenance

To prolong the life of ScaffGuards keep clean to allow for flat stacking. If a scaffGuard has been cut or damaged. It is possible to cut the ScaffGuard down to a smaller size. Please contact the supplier for additional information.

Load Information

AS 1170.2:2002 Clause 2 requires determination for site wind speed.

$V_{sit,\beta} = V_R M_d (M_z, cat M_s M_t)$ From Table 3.1 V_R varied from 20 - 50 m/sec, for regions A(1-7)

Wind Loading on Structures - AS/NZS1170.2:2002 Amended 2005						
$V_{sit,\beta} = V_R M_d (M_z, cat M_s M_t)$					9.8056	
$M_d = M_z = M_s = M_t =$		1				
$V_{sit,\beta} = V_R$						
$V_R = (Table 3.1)$	m/sec	10	20	30	40	50
	km/hr	36	72	108	144	180
1 N =	1 kg m/sec ²					
$p = (0.5 \rho_{air}) [V_{des,\theta}]^2 C_{rig} C_{dyn} \dots 2.4(1)$						
ρ_{air}	kg/m ³	1.2	1.2	1.2	1.2	1.2
p =	N/m ²	60	240	540	960	1500
p =	kPa	0.06	0.24	0.54	0.96	1.5
Internal Pressure Component	kPa	0.06	0.24	0.54	0.96	1.5
Net Porosity Factor						
$K_p = 1 - (1 - \delta)_2 \dots D1$						
δ		0.7	0.7	0.7	0.7	0.7
$K_p =$		0.91	0.91	0.91	0.91	0.91
Adjust Pressure for Porosity	N/m ²	54.6	218.4	491.4	873.6	1365
Allow for Negative Pressure		109.2	436.8	982.8	1747.2	2730
Hand Calculation - Approximate Load						
Area of 2400 Panel – 2437611 mm ²						
Scaffold Load (Full Panel)	N	146.26	585.03	1316.31	2340.11	3656.42
Scaffold Load (Full Panel)	kg	14.92	59.66	134.24	238.65	372.89

Design Criteria

AS/NZS 1170.2:2002 Structural design actions - Wind actions covers wind loading on building structures throughout Australia.

This document does not have a guideline for Scaffolding screens, however various parts of this document will form a guide to appropriate wind pressure loadings to apply to the comparison analysis and from this to determine the structural loadings on the scaffolding.

Site wind velocity and the consequent wind pressure condition is dependant on

site location,

Wind direction,

shape of building,

terrain and height multiplier,

shielding multiplier

topographical multiplier.

Determining a site wind condition is typically applied on an individual building construction basis. Because of the nature of the proposed investigation it is not possible to determine a site wind condition to cover every possible location where scaffolding can be applied – so generalized assumptions must be defined to determine a typical value for wind load.

Assumptions:

- Under cyclonic conditions – the scaffold screen would be removed from the structure
- The scaffolding is most likely to be used in multi story buildings with city type terrain topological condition – Terrain category 4.
- No variation from surrounding topological state can be accounted for.
- Shape of building – scaffold is erected before building is constructed – consequently for the purpose of scaffold screen building shape factor is most similar to Freestanding Walls, Hoardings and Canopies – Appendix D
- An internal pressure condition will be taken into account $C_{p,i}$
- Height multiplier will be taken at 20 metres
- For wind direction – we will assume worst state condition – normal to surface of the screen.
- No frictional drag effects will be applied
- No shielding from adjacent structures will be considered
- Turbulent and Dynamic effects are outside the scope of this analysis
- The internal pressure coefficient equals the external pressure coefficient for worst case scenario.
- The negative pressure condition on rear of panel is assumed equal to upwind pressure (worst case condition).

Note that scaffold screens have been constructed from shade cloth. This analysis is a comparison analysis comparing the load state of this moulded product against a solid fabric screen loading.