MURRAY STEEL BUILDINGS

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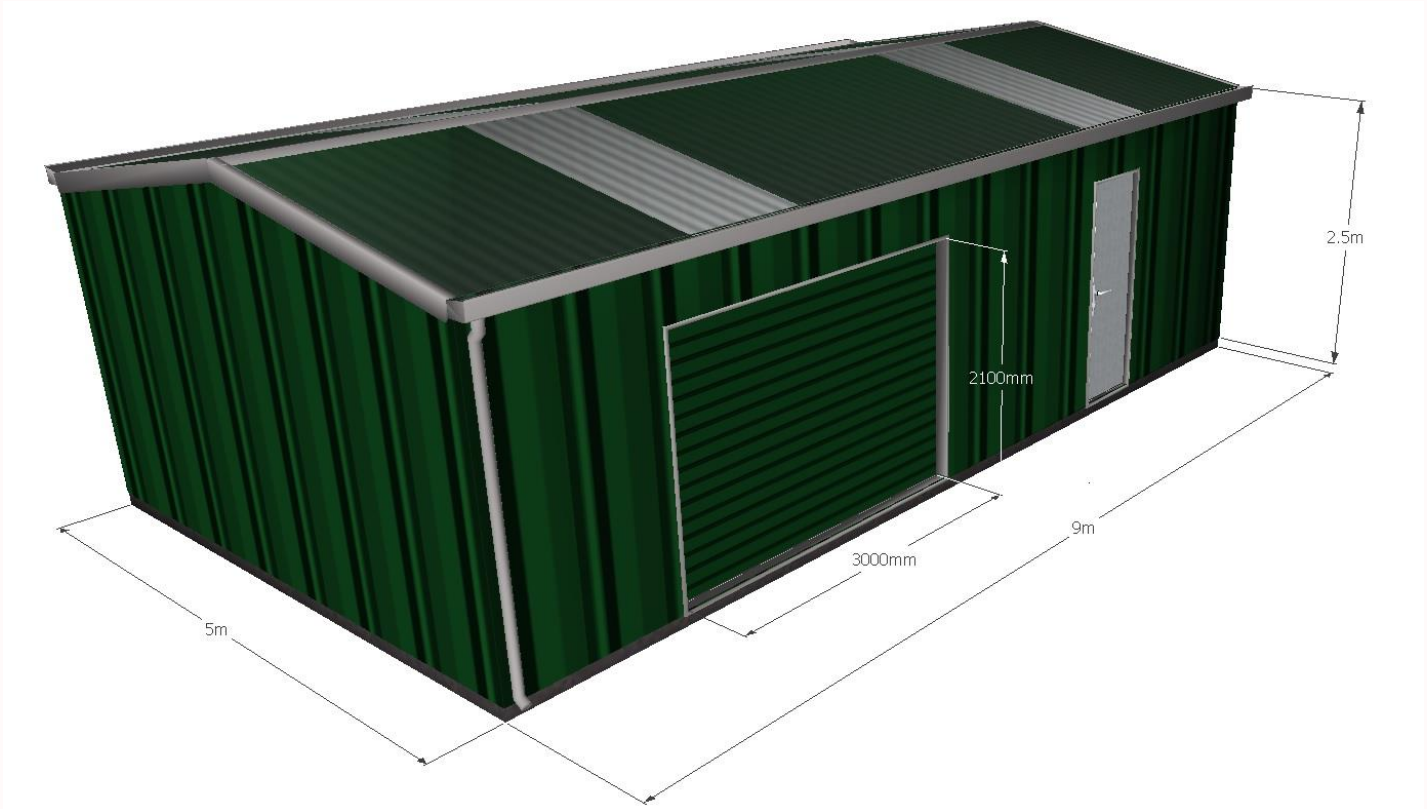
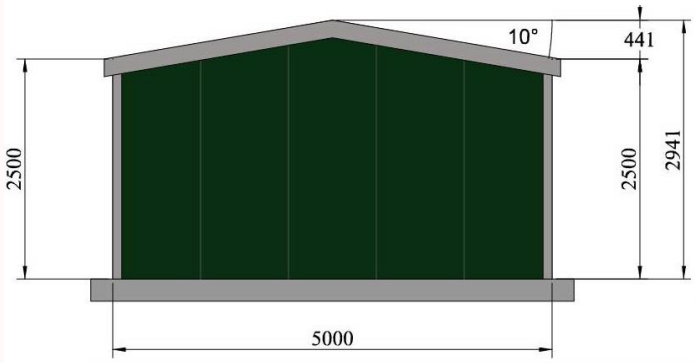
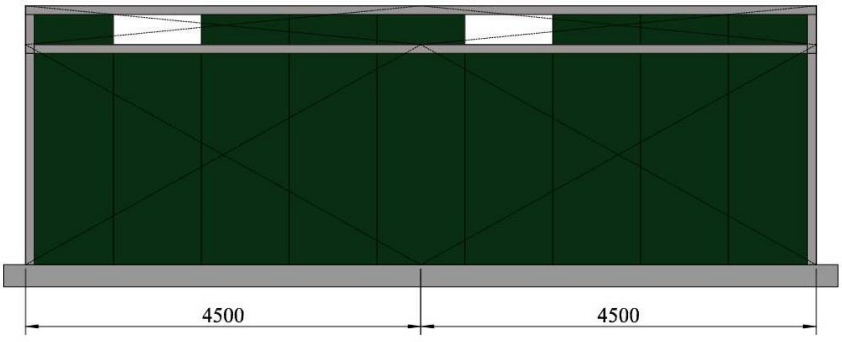
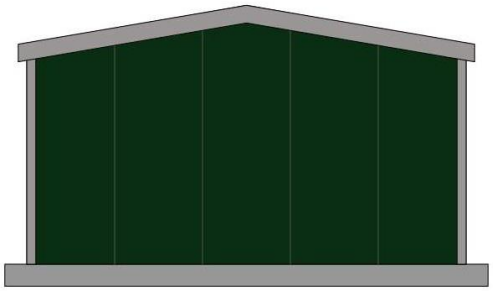
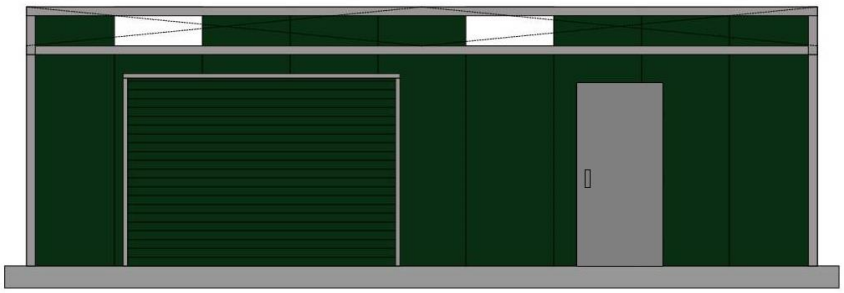
Representational Drawings & Illustrations











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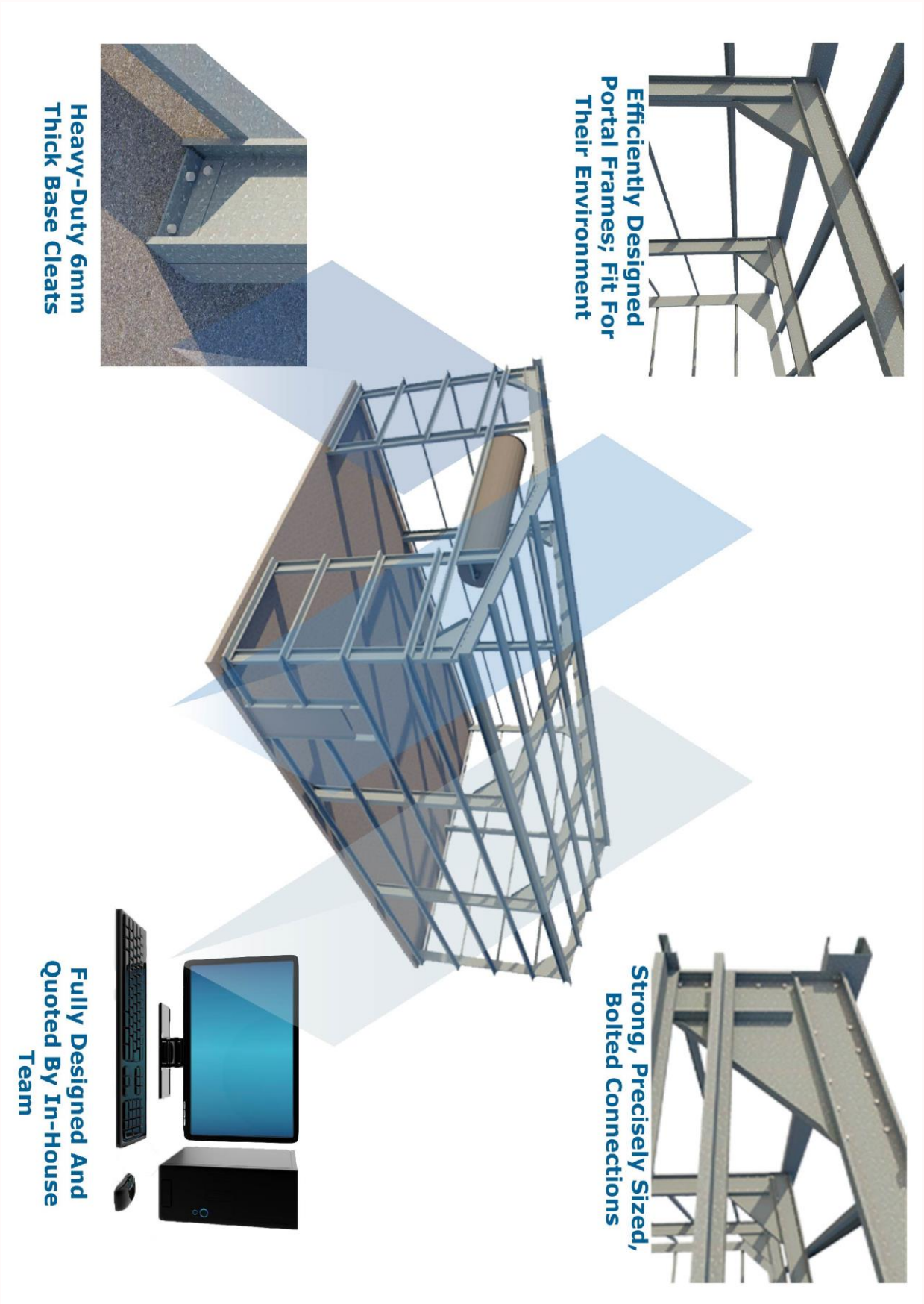
Murray Steel Buildings – Methodology



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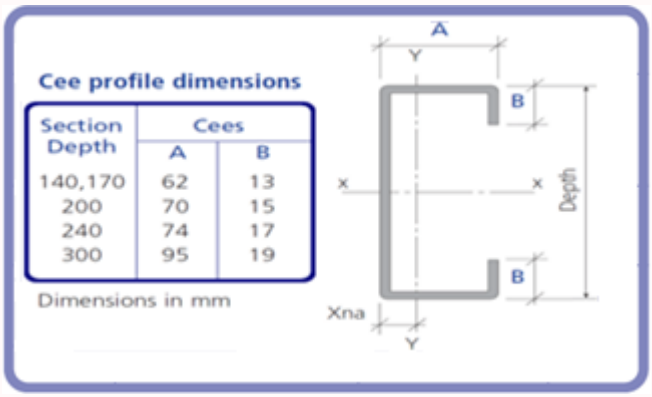
Cold Rolled 'C' Sections

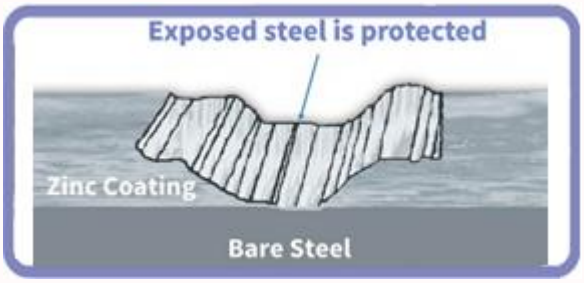


Cold rolled steel sections are incredibly strong for their weight. This means the combination of cold-rolled steel and portal frame methodology allows relatively small steel sections to span long distances.

This reduces the cost of materials and due to the reduction in weight compared to traditional construction, lifting equipment is kept to a minimum, resulting in shorter construction times and reduced erection costs.

Cold rolled steel profiles can be stacked into very compact loads. This allows a large building to be transported in a small package, significantly reducing transportation costs. All cold rolled steel sections are cut-to-length with punchings predetermined by our in-house design software; effectively providing your steel building in kit form.

All cold rolled sections are fully galvanised as standard ensuring excellent durability at no extra cost. The galvanising works like a protective, sacrificial coating which will keep your frame from rusting in the elements. This will ensure your building stands the tests of time



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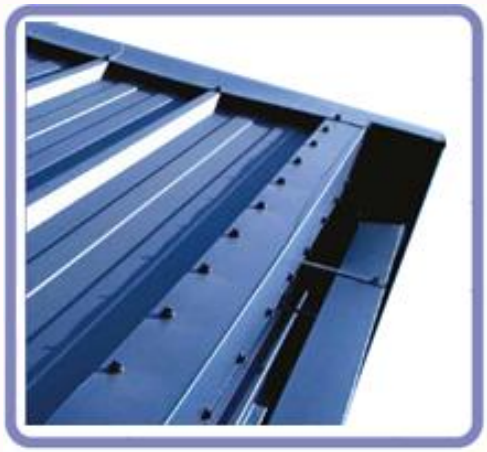
Single Skin Wall and Roof Panels

The single skin cladding systems consist of coated steel sheets rolled into five different profiles which offer rapid coverage and swift completion of a waterproof building envelope. Standard external weather-sheets are available in 0.5 and 0.7mm thicknesses and in a large variety of colours.

The roof sheets on our single skin buildings are also available with "Dripstop" anti-condensation membrane on reverse. Whilst this does not completely eliminate moisture build up the membrane does hold moisture and allows natural venting. The system includes a comprehensive range of fixings, sealants, guttering, flashings and rooflights.



Gutters and downpipes are available in a variety of materials in matching or contrasting finishes. Complete gutter systems and accessories can be manufactured to specification and the AS35 system includes a comprehensive range of matching rooflights, guttering, flashings and sealants.

Profiles have a predicted service life of 40 years and are manufactured in a process certified to **ISO 9001:2008.** The base steel is hot-dip galvanised to **BS EN 10346:2009** in a range of 33 different colours. Please see our Colour Selector brochure or website for more details. The box profile single skin sheet is **economic** sheeting in a **robust** profile that offers high strength and long lengths.

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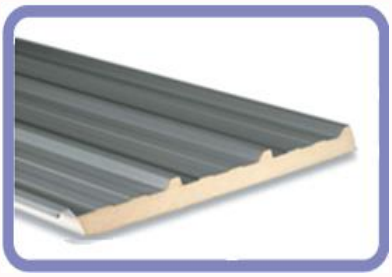
Composite / Insulated Panels



AS35 insulated panels consist of a core of polyisocyanurate (PIR) insulation sandwiched between a heavily profiled external weather sheet and an internal shallow profiled liner. The PIR insulation bonds to the steel sheets during the manufacturing process, together the insulation and steel form strong, rigid panels with good thermal performance.

Table 7: U-values for AS35 panels

Panel thickness (mm)	U-value (W/m²K)
40	0.50
60	0.35
70	0.30
80	0.25
100	0.20
110	0.18
120	0.16
130	0.15

PIR insulation is used in the AS35 panels because it has a low thermal conductivity: for a given U-value panels with PIR cores will be thinner than those with mineral wool or EPS cores. PIR can withstand higher temperatures than PUR and will limit the spread of flame.

AS35 panels have a cover width of 1m and are available in various thicknesses. The standard external weather sheet is 0.5mm thick and the internal liner 0.4mm thick. The steel is hot-dip galvanised to BS EN 10327:2004 then finished with one of a number of high-quality coatings.

Table 8: Fire performance to LPS 1181:2005

LPBC ref	Panel	Thickness (mm)	Orientation	Integrity (minutes)	Insulation (minutes)	LPS 1181 Grade	Core material
635a/08	AS35	40, 60, 70, 80, 100, 110, 120, 130	V	N/A	N/A	EXT-B	PIR
635a/09	AS35	60, 70, 80, 100, 110, 120, 130	V	120	15	EXT-A15	PIR

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Brackets and Base Fixings

Our frames are fully bolted together: All brackets and base fixings are fully galvanised and predrilled, ready for assembly. This feature makes installation simpler, reduces the potential for human error and is consequently less labour-intensive to install. All framing components are bolted.

Fixings

Fixings for roof profiles provide restraint against wind uplift forces; those for wall profiles provide restraint and support. Whilst profiles may be fixed through valleys or crowns, we recommend valley fixing: accurate fixing is easier to achieve, loads on the fixings are smaller, the fixings are less likely to distort the profile, and better compression of the sealant is achieved at end laps.

Colortite Screws

The integration of the durable Drillitite SD Stainless steel fasteners with the Colortite nylon moulded head produces a fastener with exceptional resistance to weather and corrosion.

Rooflights

Rooflights can be supplied to meet project requirements for light transmission, durability, non-fragility rating, fire resistance and thermal performance. In an insulated building the rooflights are double or triple skinned and do not compromise security.

PA Doors

Our secure steel doors are designed to integrate perfectly with our steel cladding systems. There are two door types; a fire rated emergency escape steel door and a **twelve point locking security** steel door, each insulated to BS EN 1634-1:2000:

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Roller & Sectional Doors

There are endless options when it comes to doors but the most popular options are the four listed below;

1) Domestic Roller Doors
2) Light Industrial Roller Doors
3) Industrial Roller Doors (Class 5)
4) Insulated Sectional Doors

All doors above can be electrically or manually operated.

Our **Roller Doors** are plastisol coated to the colour of your choice extending the life of your roller door.

Roller Doors offer huge benefits over the traditional 'up and over doors'; they minimise the impact on the internal space and reduces wear on guides and moving parts. Please do not hesitate to ask us about our roller door options as these can make the difference between a building being 'fit for purpose' or not.

Our **Sectional Doors** can be supplied in two thicknesses, 40mm and 60mm, these offer an insulated option where temperature control is important.

Sectional doors with a 40-mm-thick PU-foamed section are especially robust, offering excellent thermal insulation.

With the 60-mm-thick sectional doors with thermal break, you benefit from a very high thermal insulation. Its excellent insulation value (up to 0.48 W/m²K) is achieved thanks to the thermal break between the exterior and interior of the steel section. This also minimises the formation of condensation water on the inside of the door.

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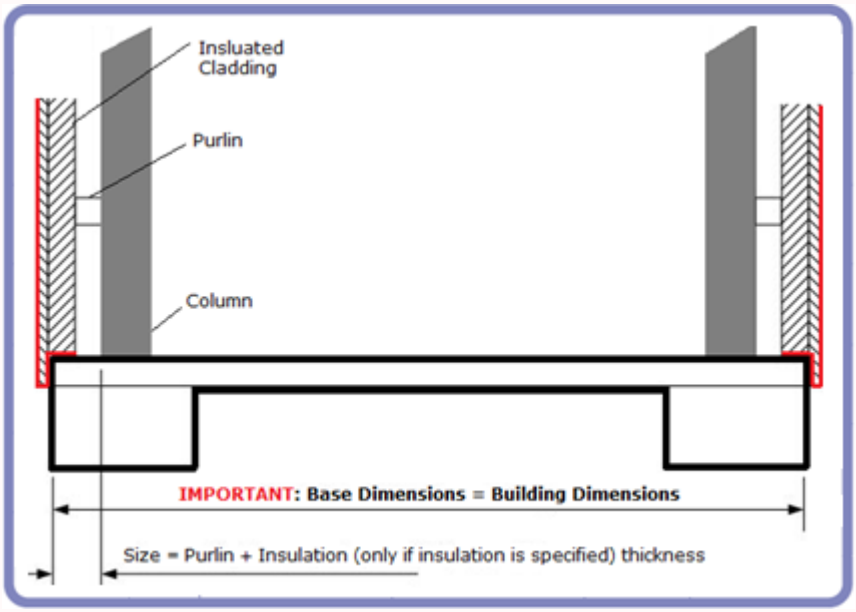
Base/Foundation Information

Our buildings should be erected onto a correctly prepared slab to ensure your buildings upward and downward forces are accommodated.



To ensure a weather seal we recommend creating a base that is raised off ground level by a minimum of 50mm to allow our cladding to overhang the base and promote water to run away from the structure. Our buildings can be erected on to oversized bases/yards however this does introduce the need for an alternative method of creating a seal around the perimeter of the building, please call us to discuss the options available.

The image to the right shows a single skin arrangement where the whole panel overhangs the base and creates the rain water run-off.

It is essential that a detailed conversation about how your proposed building will be mounted takes place prior to ordering the structure. If the building is not erected onto a pre prepared base we will need to introduce additional materials to promote a weather