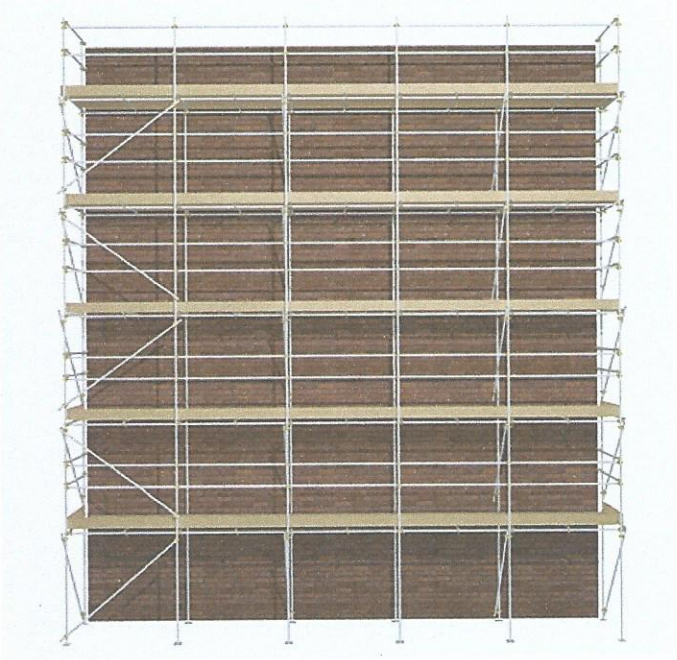
NASC

With support from: UKCG

Independent scaffolding

A tied independent scaffold with 2.0 m maximum lift heights, unclad, assembled from tubes and fittings.



Design height

✓ Maximum height: 16.0 m to the top lift.

Maximum loading

✓ One lift loaded, plus one lift 50% loaded, per façade to a maximum of: 2.0 kN/m²;

✓ Foundation design leg load (for the client): 17.52 kN;

! This scaffold includes add-ons with additional leg loads stated on their TG20 compliance sheets.

Ties

✓ 1 x 2.38 kN (very light duty) tie per 16.0 m²;

✓ Max. 4.0 m between tie lines (tied at alternate lifts);

✓ Max. 4.0 m horizontal distance between vertical tie lines.

Location

Suitable for sites with a wind factor of 24.5 (moderate wind exposure).

Add-ons features

✓ A gin wheel may be used to lift a maximum of 50 kg.

The following features are permitted in accordance with a TG20 compliance sheet: two-bay bridge; cantilevered fan; ladder tower.

Design advice may be required if any add-on features not stated on this compliance sheet are attached to the scaffold.

Criteria

To be erected as a TG20 compliant tied independent scaffold as described in TG20:13 chapter 06:

✓ 3 – 5 boards wide;

✓ Maximum lift height: 2.0 m;

✓ Maximum bay length: 2.0 m;

✓ Maximum transom spacing: 1.2 m;

✓ The scaffold will not be clad with debris-netting or sheeting;

✓ Boarded at any number of lifts;

✓ Tied to an impermeable façade (no significant openings);

✓ Façade braced in every elevation, one set per six bays;

✓ Ledger braced at alternate standards and at end frames;

✓ Double guard rails and toe boards at boarded lifts (triple permitted at top);

✓ Single guard rails at unboarded lifts;

✓ Internal edge protection provided where required;

✓ Tied in accordance with TG20:13 chapter 07. Tie tubes must be connected to the inner and outer faces with right-angle couplers in all circumstances.

Sign-off

Contract no:	4137/FS&S	Client:	E.X.Ample
Company:	Fletchers Scaffolding and Son	Scaffold reference:	
NASC membership no (1):	n/a	Site reference:	"Sea Shore"
Name:	P.D.Fletcher	Position:	Partner
Signature:		Date:	07/08/2017

Notes: Example Only.

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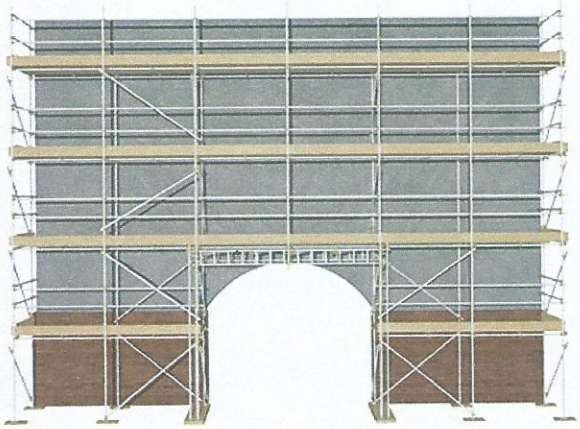
Two-bay bridge

A bridge supporting a two-bay opening in a TG20 compliant tied independent scaffold as described in TG20:13 chapter 09.



Design height

- ✓ Suitable for use within a load class 3 TG20 compliant tied independent scaffold of 16.0 m maximum height, 3 – 5 boards wide;
- ✓ Supporting a maximum of 8 lifts above the bridge;
- ✓ Combined foundation leg load (for the client): 26.28 kN;
- ! Special consideration may be required as the foundation design load exceeds 20 kN.

Bridge specification

- ✓ Maximum span of 4.0 m, supporting two bays;
- ✓ At least one braced bay of scaffolding is required both sides of the opening and between openings;
- ✓ The opening may extend vertically to form a partial opening in the scaffold or to extend to the foundation;
- ✓ The scaffold is to be tied at the supporting standards;
- ✓ The standards adjacent to the opening must be doubled.

Beam specification

Supported by a pair of 305 mm (minimum) deep steel ladder beams or equivalent steel or aluminium lattice or unit beams with the following minimum structural properties:

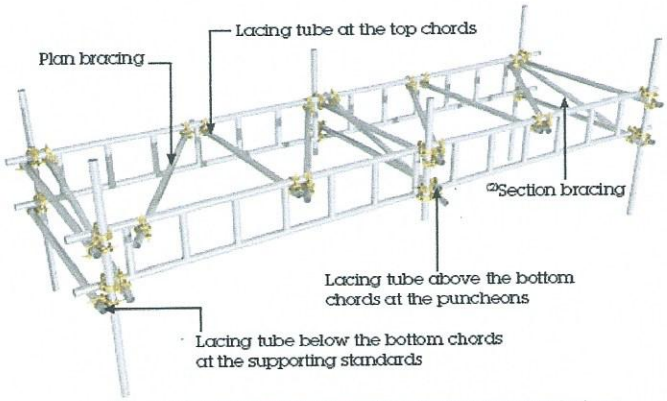
Beam property	Minimum value
Safe working moment resistance with top chord restraints at 1.2 m spacing	12.5 kNm
Safe working shear resistance	8.3 kN

Beam fixing and bracing

Beams at the inner and outer faces, fixed to each standard at the top and bottom chords with right-angle couplers.

Beams braced with tubes and right-angle or swivel couplers to form a 'box girder':

- ✓ Lacing tubes between top chords at 1.2 m spacing and between bottom chords at 2.4 m spacing;
- ✓ Plan braced in the top third of the beams at 1.2 m spacing;
- ✓ Section bracing at 2.4 m spacing (2).



(2)If required, following guidance from the beam manufacturer

Scaffold bracing

- ✓ Façade braced both sides of the bridge at the inner and outer faces, within six bays of the opening, to the height of the bridge;
- ✓ Supporting standards ledger braced both sides of the opening to the height of the bridge.

Sign-off

Bridges conforming to this specification will be erected within TG20 compliant tied independent scaffolding.

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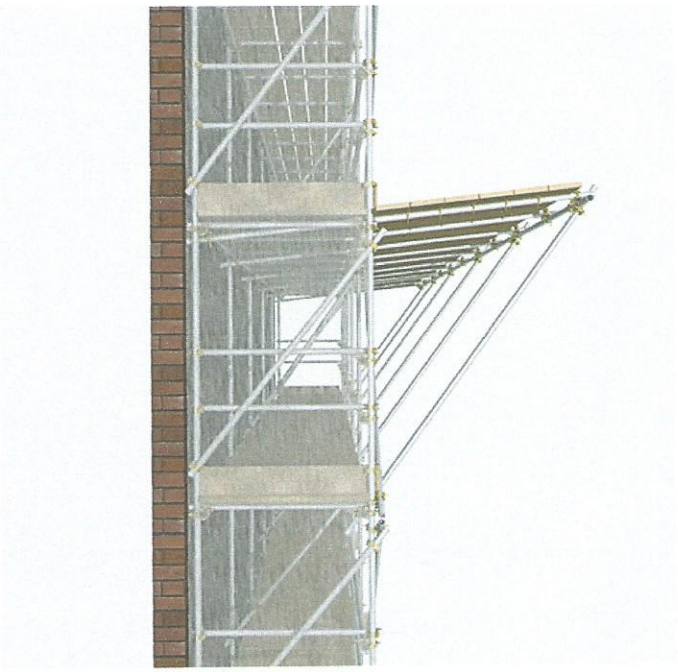
Cantilever protection fan

A cantilever protection fan supported by a TG20 compliant tied independent or tied tower scaffold as described in TG20:13 chapter 10.



Design height

✓ Suitable for use with a TG20 compliant tied independent or tied tower scaffold with maximum 2.0 m bays and a maximum height of 16.0 m to the top lift in a site with a wind factor of 24.5 (moderate wind exposure).

Fan specification

✓ Maximum one fan per scaffolding elevation;

✓ Minimum clearance of 2.44 m for pedestrians and 5.05 m for vehicles, subject to local Highway Authority requirements;

✓ Maximum fan width: 6 boards.

Ties

✓ The lift supporting the fan must be tied at alternate (ledger-braced) standards with 2.38 kN (very light duty) ties.

Fan usage

! Intended to catch small objects such as fittings from a maximum vertical distance of 6.0 m;

! Protection fans cannot be guaranteed to catch and retain falling objects and must be used as part of a safe system of work based on a risk assessment;

! The effectiveness of a fan less than six boards wide will be reduced accordingly.

Fan loading

✓ Supports a maximum load of 0.75 kN/m²;

× Must not be used for the storage of materials. Aggregate or snow must be cleared promptly.

Fan construction

✓ Supported by propped cantilever principal transoms matching the bay spacing of the main scaffold;

✓ Connected below the inner ledger and above the outer ledger of the main scaffold with right-angle couplers;

✓ Preferably supported by raking props connected to the lift below, or by raking hangers to the lift above, at the bay spacing of the main scaffold;

✓ Decked with 38 mm thick timber scaffold boards, close boarded and restrained from lifting off;

✓ Decking supported by intermediate transoms with a maximum spacing of 1.2 m;

✓ Toe boards and guard rails must remain in place at the lift supporting the fan.

Sign-off

No more than one such fan will be fitted per elevation of TG20 compliant tied independent scaffolding.

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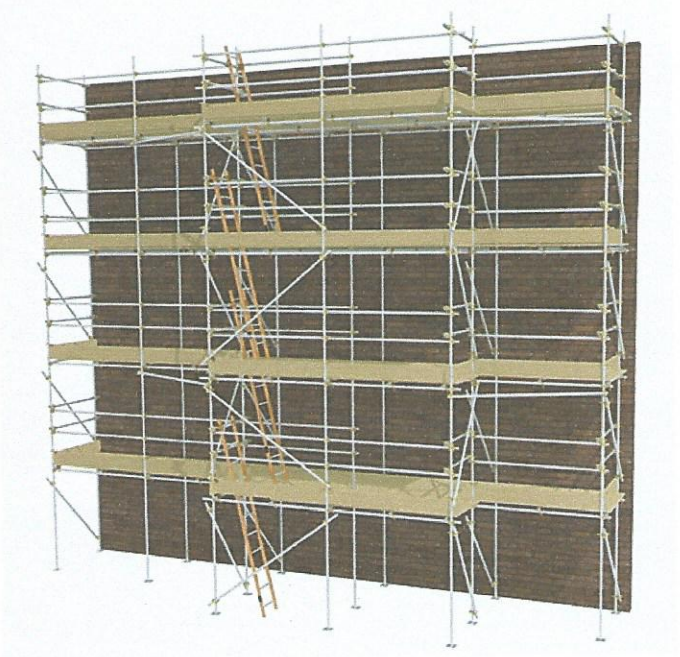
Ladder-access tower

A scaffolding tower for the provision of external ladder access to a tied independent scaffold.



Design height

✓ Maximum height: 16.0 m to the top lift.

Maximum loading

✓ Designed to support up to six lifts simultaneously loaded with personnel to a maximum load of 1.0 kN/m²;

✓ Foundation design leg load (for the client): 20.37 kN;

! Special consideration may be required as the foundation design load exceeds 20 kN;

! Must not be used for the storage of materials.

Ties

✓ Tied at the end standards with 2.85 kN (light duty) ties;

✓ Maximum 4.0 m between tie lines (tied at alternate lifts).

Location

Suitable for sites with a wind factor of 24.5 (moderate wind exposure).

Add-on features

Design advice may be required if any add-on features not stated on this compliance sheet are attached to the tower.

Criteria

To be erected as a TG20 ladder-access tower for a TG20 tied independent scaffold as described in TG20:13 chapter 08:

✓ Maximum lift height: 2.0 m;

✓ Maximum length: 2 x 2.0 m bays;

✓ Maximum transom spacing: 1.2 m;

✓ 3 - 5 boards wide;

✓ Facade braced at the outer face of the tower;

✓ Ledger braced at the end faces of the tower;

× May not be clad with sheeting or debris-netting;

✓ Double guard rails and toe boards at boarded lifts (triple permitted at top);

✓ Single guard rails at unboarded lifts;

✓ Tie tubes connected to the inner, middle and outer standards or ledgers with right-angle couplers;

✓ Wing braced back to the main scaffold at alternate (tied) lifts and the top lift. Plan bracing may be provided instead of wing bracing if preferred;

✓ End transoms connected with right-angle couplers at the top wing-braced lift if it is not tied.

Sign-off

These access towers will be used with TG20 compliant independent scaffolding.

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Name:	P.D.Fletcher	Position:	Partner
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Notes:	Example Only.		

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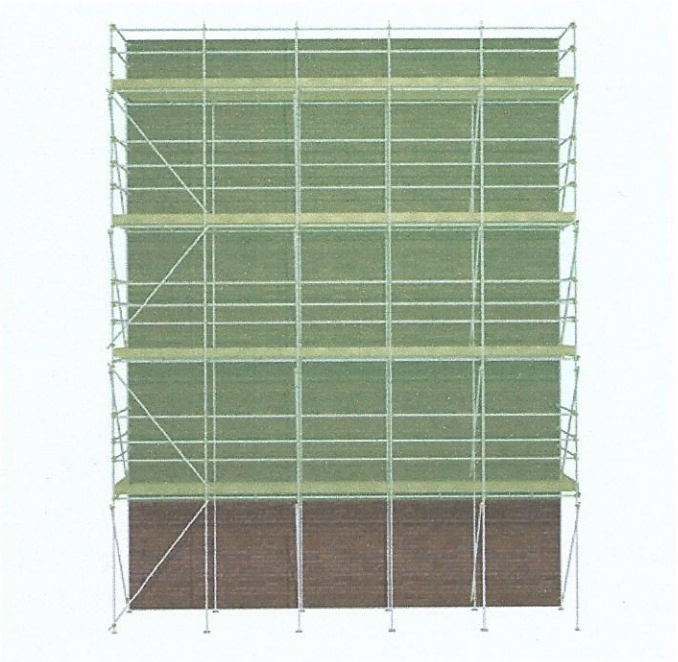
Independent scaffolding

A tied independent scaffold with 3.0 m maximum lift heights, clad with permeable debris-netting, assembled from tubes and fittings.



Design height

- ✓ Maximum height: 16.0 m to the top lift.

Maximum loading

- ✓ One lift loaded, plus one lift 50% loaded, per façade to a maximum of: 2.0 kN/m²;
- ✓ Inside boards loaded to a maximum of 0.75 kN/m² at the working lift;
- ✓ Foundation design leg load (for the client): 13.16 kN.

Ties

- ✓ 1 x 2.09 kN (very light duty) tie per 12.0 m²;
- ✓ Max. 3.0 m between tie lines (tied at every lift);
- ✓ Max. 4.0 m horizontal distance between vertical tie lines.

Location

Suitable for sites with a wind factor of 24.6 (moderate wind exposure).

Add-ons features

- ✓ A gin wheel may be used to lift a maximum of 50 kg.

Design advice may be required if any add-on features not stated on this compliance sheet are attached to the scaffold.

Criteria

To be erected as a TG20 compliant tied independent scaffold as described in TG20:13 chapter 06:

- ✓ 3 – 4 main boards and up to 1 inside board wide;
- ✓ Maximum lift height: 3.0 m;
- ✓ Maximum bay length: 2.0 m;
- ✓ Maximum transom spacing: 1.2 m;
- ✓ The scaffold will be fully or partially clad with high permeability debris-netting;
- ✓ Boarded at any number of lifts;
- ✓ Tied to an impermeable façade (no significant openings);
- ✓ Façade braced in every elevation, one set per six bays;
- ✓ Ledger braced at alternate standards and at end frames;
- ✓ Triple guard rails and toe boards at boarded lifts;
- ✓ Single guard rails at unboarded lifts;
- ✓ Internal edge protection provided where required;
- ✓ Tied in accordance with TG20:13 chapter 07.

Sign-off

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NASC membership no (1):	n/a	Site reference:	"Sea Shore"
Name:	P.D.Fletcher	Position:	Partner
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Chimney stack scaffolding

A scaffold for providing access to a chimney stack, supported by a tied or buttressed scaffold tower.



Maximum loading

- ✓ Maximum working load: 1.5 kN/m²;
- ✓ Leg load (for the client): 2.9 kN;
- ! The responsibility for the adequacy of the roof to support the scaffold must be established before work commences. A structural engineer may be required to check its integrity.

Permitted dimensions

- ✓ Maximum bay length: 2.0 m;
- ✓ Maximum width: four boards;
- ✓ Maximum transom spacing: 1.2 m.

This illustration is for a typical arrangement of scaffolding. The actual configuration of scaffolding will depend on the roof and chimney dimensions.

Location

Valid in the British Isles where the site wind exposure is not 'extreme' as defined in TG20:13 chapter 03.

Add-on features

- ✓ A gin wheel may be used to lift a maximum of 50 kg.

Design advice may be required if any add-on features not stated on this compliance sheet are attached to the scaffold.

Criteria

To be erected as a TG20 compliant tube-and-fitting chimney stack access scaffold as described in TG20:13 chapter 16:

- ✓ Access provided by a tower or independent façade scaffold supported by its own foundations;
- ✓ Loads should be supported by the ground level as far as possible to limit the load supported by the roof;
- ✓ Maximum one lift supported by the roof for chimneys at the ridge;
- ✓ Standards supported by the roof must be placed on bearing boards spanning at least two rafters;
- ✓ The standards should be connected with a horizontal tube immediately above the bearing boards to prevent the standards penetrating the boards;
- ✓ Protected at the perimeter with double guard rails and toe boards;
- ✓ A triple guard rail may be provided at the access tower to provide additional fall protection;
- ✓ Plan bracing should be provided under the walkway if it is more than one bay in length;
- ✓ The access scaffold should be tied to the roof structure at the eaves to minimise the height of the projecting tower;
- ✓ Alternatively the tower may be buttressed with fully triangulated rakers acting in conjunction with butting transoms at the 4.0 m lift position;
- ✓ If the tower is between buildings the ties may be omitted and the tower securely butted between opposing walls;
- ✗ The scaffold should not be clad with sheeting or debris netting, or have a sign board above the topmost tie level.

Sign-off

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Company:	Fletchers Scaffolding and Son	Scaffold reference:	
NASC membership no (1):	n/a	Site reference:	"Sea Shore"
Name:	P.D.Fletcher	Position:	Partner
Signature:		Date:	07/08/2017

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