

RAMSCAFF Frame scaffold

Holder/ Manufacturer/ Supplier

Solideq AS

Rypevegen 2, 2406 Elverum

Product name

RAMSCAFF scaffolding

Product description

As per pages 2–10 of this type-examination certificate. Technical documentation as provided to RISE, no. 8P02433 and P108367.

Certificate

RISE certifies that the product specified on this type-examination certificate complies with the requirements of the Swedish Work Environment Authority's Statute Book as per the provisions of AFS 2013:4 Scaffolding, Section 10 (RISE certification rules SPCR 064) and SS-EN 12810-1:2004 with associated standards.

Evaluated system configurations

Load class 2 - 4 (1.5 - 3.0 kN/m²), under the conditions contained in the product description.

Marking

All main components must be indelibly marked with A 75, year of manufacture RR (2 digits) and month of manufacture M (1 digit) according to A 75 RRM. The products may also be marked with the RISE type-examination label (see below for example).

Period of validity

The type-examination certificate is valid until no later than 2029-06-04.

Miscellaneous

RISE conducts annual inspections of type-examined scaffolding components as per Section 5 of SPCR 064. This type-examination certificate supersedes the previous certificate with the same number. The type-examination certificate was originally issued on 2019-06-04. The validity of this type-examination certificate can be verified at RISE homepage.



Martin Tillander

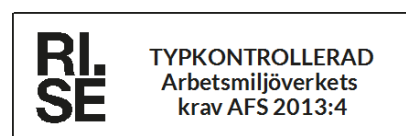
This is a translation from the Swedish original document. In the event of any dispute as to its content, the Swedish original shall take precedence.

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Box 857, 501 15 Borås

+46 10 516 50 00 | certifiering@ri.se | www.ri.se



Product description for RAMSCAFF frame scaffolding

Design

RAMSCAFF scaffolding consists of aluminium frames, vertical diagonals, platforms, guardrails, consoles etc. according to the component list below. Access ladders consist of stairs mounted in separate frames adjacent to the scaffolding. All components are presented in the following specification.

Component	Measurement (m)	Item number
Base jack	H=500, 650, 750, 900	T00026, T00113, T00027, T00013
Base jack, hinged	H=500	T00052
Aluminium frame	H=0.66, 1.00, 1.50, 2.00	C282206, C282210, C282215, C282220
Combi frame	H=1.06	C282210A
Top end frame	H=1.00	C288107
Transfer frame	1.55 × 2.2	C281515
Bypass frame alu		C280520
Single guardrail steel	0.73, 1.07, 1.57, 2.07, 2.57, 3.07	C283607, C283610, C283615, C283620, C283625, C283630
Single guardrail alu	0.73, 1.07, 1.57, 2.07, 2.57	C283607A, C283610A, C283615A, C283620A, C283625A
Double guardrail	1.07, 1.57, 2.07, 2.57, 3.07	C284310, C284315, C284320, C284325, C284330
Double guardrail w/diagonal	2.07, 2.57, 3.07	C284320A, C284325A, C284330A
End double guardrail alu	0.36, 0.73	C283903, C283907
End double guardrail steel	0.73	C283007
Coupler with wedge for guardrail		C284600
Inner guardrail post 1.00m	1.00	T00030A
Distance coupler	Ø 48.3 - 160 mm	T008297
Platform with composite board 0.61 m	0.73, 1.07, 1.57, 2.07, 2.57, 3.07	C491907A, C491910A, C491915A, C491920A, C491925A, C491930A
Platform with w/ hatch and ladder composite board 0,61 m	2.57, 3.07	C492125A, C492130A
Platform w/ hatch composite board 0.61 m	1.57, 2.07, 2.57, 3.07	C492515A, C492520A, C492525A, C492530A
Platform with composite board 0.32 m	0.73, 1.07, 1.57, 2.07, 2.57, 3.07	C493007A, C493010A, C493015A, C493020A, C493025A, C493030A
Platform with plywood board 0.61 m	0.73, 1.07, 1.57, 2.07, 2.57, 3.07	C491907, C491910, C491915, C491920, C491925, C491930
Platform with w/ hatch and ladder plywood board 0.61 m	2.57, 3.07	C492125, C492130
Platform with w/ hatch plywood board 0.61 m	1.57, 2.07, 2.57, 3.07	C492515, C492520, C492525, C492530

Platform with plywood board 0.32 m	0.73, 1.07, 1.57, 2.07, 2.57, 3.07	C493007, C493010, C493015, C493020, C493025, C493030
Aluminium ladder		C511600
Aluminium platform ECO	0.73, 1.07, 1.57, 2.07, 2.57, 3.07	C491507, C491510, C491515, C491520, C491525, C491530
Steel platform ECO	0.73, 1.07, 1.57, 2.07, 2.57, 3.07	C491607, C491610, C491615, C491620, C491625, C491630
Toeboard	0.73, 1.07, 1.57, 2.07, 2.57, 3.07	C286807, C286810, C286815, C286820, C286825, C286830
Toeboard End	0.73	C286807
Wall ties	0.4, 0.6, 0.8, 1.0, 1.2, 1.5	T00007U, T00053U, T00056U, T00178U, T00054U, T00008U
Wall ties, adjustable	0.75-1.25, 0.50-0.85	T00199U, T00247U
Wall ties, adjustable w/coupler	0.6, 0.4	T00085, T00153
Railing Post		C287007, C287007A, C203084
Diagonal brace with wedge coupler	1.57, 2.07, 2.57, 3.07	C284815, C284820, C284825, C284830
Diagonal brace	1.57, 2.07, 2.57, 3.07	C284715, C284720, C284725, C284730
Telescopic diagonal brace	1.57-3.07	C284800
Horizontal brace	1.57, 2.07, 2.57, 3.07	C283815, C283820, C283825, C283830
Hop-up bracket diagonal brace	1.77	C285179
Hop-up bracket	0.36, 0.73	C285539, C285579
Hop-up bracket 0,73 m for lifting wheels	0.73	C285579A
Lifting wheels for hop-up bracket		T00045
Protective Roof Console	0.73	C288501
Net screen post	0.73×2.0, 0.73×2.0	C285908, C285914
Mesh panel alu	1.57, 2.07, 2.57, 3.07	C285015, C285020, C285025, C285030
Aluminium stair	2.57, 3.07	C286225, C286230
Stair	1.30x1.00	C286210
Exterior guardrail for stair	2.57, 3.07	C286325, C286330
Interior guardrail for stair	3.07	C286300
Internal guardrail for stair bottom		C286310
U-transom for aluminium stairs	0.73	C286207
U-transom with steel coupler	0.73	C285379
Frame support	0.73	C503573
Bridging Ledger	3.2, 4.2, 5.2, 6.2, 8.1	C000255, C000257, C000258, C000259, C000261
Joint for truss beam		C003588
Five bar plate with handle in alu	0.5×0.5, 0.7×0.5, 1.1×0.5, 1.14×0.64, 0.7×0.32	R75050, R75070, R75110, R75114, R75032

Other accessories: eye bolt, lock to frame

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Dimensions

Component	Dimensions (mm)
Aluminium frame, standard	Ø48.3×4.0
lower crossbar	48×25×4.0
upper crossbeam, U-profile	60×48×3.0
Basejack	Round threaded Ø36
Double guardrail, main pipe	Ø40×2.5
diagonal/vertical	40×20×2.0
Double guardrail w/diagonal, main pipe	Ø40×2.5
diagonal/vertical	40×20×2.0
Diagonal brace	Ø42.4×2.0
Wall ties	Ø48.3×3.25
Bridging Ledger, horizontal pipe	Ø48.3×4.0
vertical pipes	Ø48.3×4.0
diagonal	30×22×3.0

Evaluated system configurations

- The evaluated system configurations are presented in the following table.

	(1)	(2)
Load class	4	3
Permissible load (kN/m ²)	3.0	2.0
Base jack, maximum extension	≤750 mm	>750 mm and articulated
Bay length (m)	3.07	
Bay width (m)	0.73	
Bridging Ledger ¹⁾	Yes	
Platform ²⁾	on all levels	
Lift height (m)	2.0	
Building height (m)		
- without hop-up brackets	24.5	24.5
- with hop-up bracket 0.36 m on all levels	24.5	24.5

Not. Each individual load-bearing component must meet at least the load class presented for each system configuration above.

¹⁾ Design with bridging beam, see figure on page 6.

²⁾ For the calculations, the self-weight corresponding to composite platforms has been used.

- When evaluating the system configurations, the maximum load capacity of the scaffold has been determined, that is, the load capacity with a height of 25 m or more and the point at which the scaffold fails. This evaluation provides standard loads that can be used for simplified calculations, see **Conditions during use, item 1.**

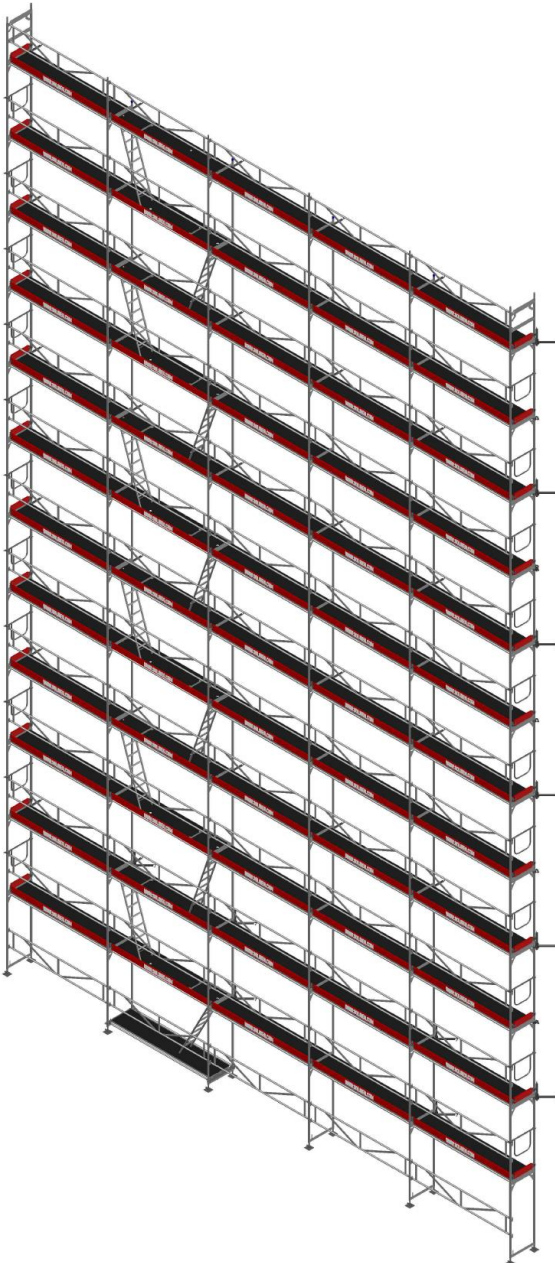
- The scaffold is tied to the wall according to the **Conditions of Use, point 6.**

The maximum design anchorage force perpendicular to the facade is 2.9 kN.

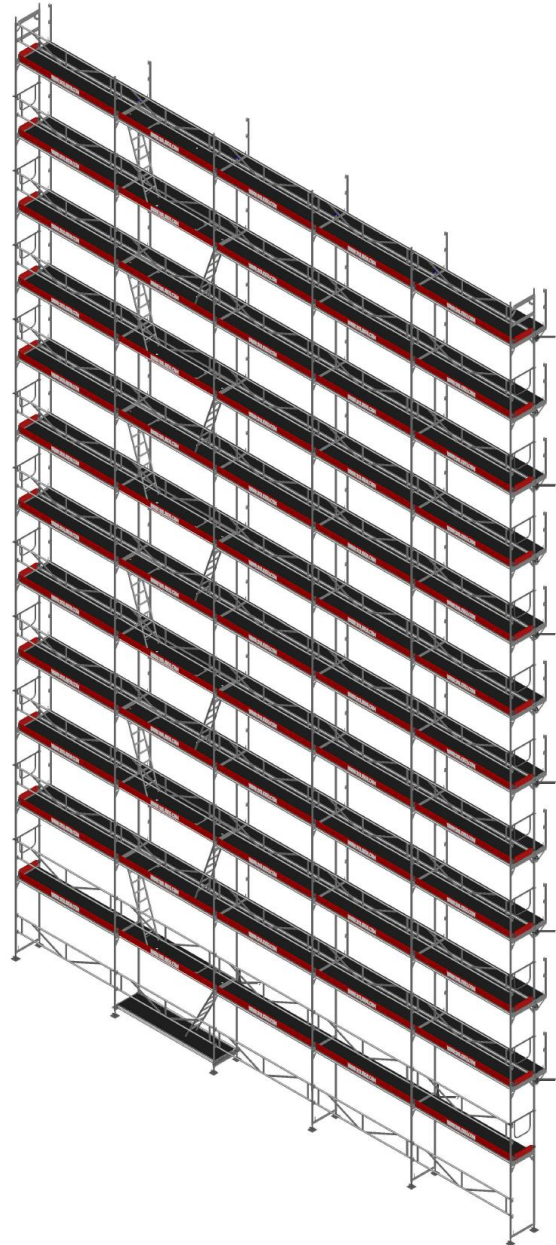
The maximum anchor forces for dimensioning anchors capable of absorbing horizontal forces (V- anchorage) are 4.3 kN and 6.4 kN parallel and perpendicular to the facade respectively.

4. The maximum design force on the foundation is 22 kN/standard.
5. The calculations are made with the assumption that work is conducted on one(1) level only.
6. In conjunction with the type-examination, the assembly instructions dated 2022-02 have been reviewed.

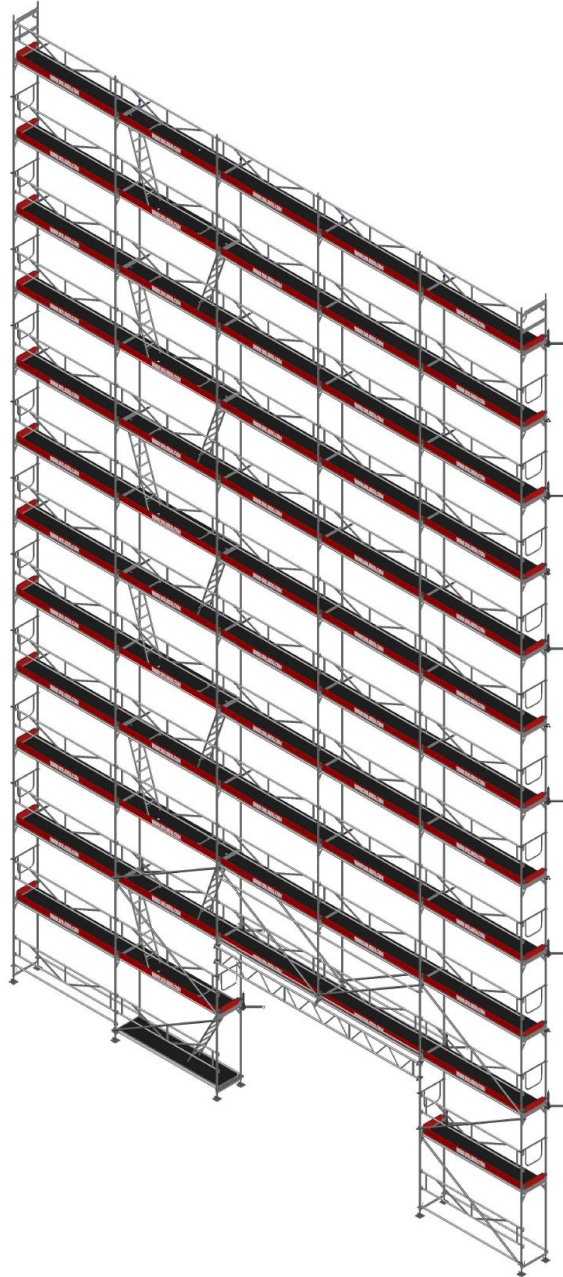
System configurations 24 m



Scaffold without hop-up brackets according to the table under item 1.



Setting with hop-up brackets 0.36 m according to the table under item 1.



Scaffold with bridging ledger according to the table under point 1. Maximum permitted width of the opening is 6.14 m. Additional components to reinforce the opening in the scaffolding as below:

- double wall ties at 2.5 m and 4.5 m height at the side of the opening,
- simple wall ties above the opening at a height of 6.5 m,
- V-diagonal bracing on the inside and outside above the opening using steel tubes $\text{Ø}48.3 \times 3.2$ mm and swivel couplings,
- diagonal bracing on the outside in the three lowest rack levels (see figure above) on each side of the opening,
- longitudinal horizontals (steel pipes $\text{Ø}48.3 \times 3.2$ mm and right-angled couplings) on the inside and outside at ground level and above the opening at 6.5 m level.

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Conditions during use

1. In the case of simplified dimensioning, a permissible standard load as set out in the following table can be used, provided that the other applicable conditions set out below are met. In the case of simplified dimensioning using the partial coefficient method, the maximum load capacity is obtained by multiplying the permissible standard load by 1.5.

Type of basejack	Permissible standard load (kN)			
	500	750	900	pinned
Without hop-up brackets	6.4	5.4	4.8	5.1
With hop-up bracket 0.36 m on all levels, below bracket*	7.5	5.6	4.7	5.6
With hop-up bracket 0.36 m on all levels, not under the console	5.8	5.6	5.4	5.0

* Refers to the maximum load on the standard under the bracket.

2. Clear headroom between working areas shall normally correspond to height class H2, which means headroom of at least 1.90 m between working areas and transom, or between working areas and ledger when using brackets to widen the scaffold. The headroom between the working areas and any horizontal diagonal brace shall be at least 1.90 m regardless of height class.
3. Each level must be fitted with horizontal braces or ledgers on both the inside and the outside. The bottom level must always be placed at the lowest possible level.
4. Working areas must be fitted with double guardrails or guardrail frames and toe-boards if the fall height is two metres or more.
5. Vertical diagonal braces parallel to the façade must be fitted in at least every 5th bay and always in the outermost bays. These can be omitted if double railings with diagonal are used.
6. The scaffold must be tied to the wall every 4 metres of height towards the inner standard in connection with the junction point between the standard and the upper crossbeam. The lowest anchorage may be placed a maximum of approximately 4.5 m above the ground.

Wall ties capable of absorbing horizontal forces shall be used at least every 5th longitudinal helix at each anchorage level. Adjustable wall brackets with couplers shall not be used for this purpose. They shall only be used for anchoring perpendicular to the façade.

In the case of covered scaffold and/or at heights higher than 24 m, larger wind loads can arise and therefore also higher anchorage forces.

7. When a bracket is used, the space between the main plane and the bracket level should be covered, normally with a ledger beam, or by other means.
8. The maximum extended length of the base jack is 0.5 m.
9. When using the lifting device, hop-up bracket and lifting wheels, it may be loaded with a maximum of 50 kg. Extra anchoring ropes are required when using the lifting device, see the installation instructions for more information.
10. Access is via stairways attached to two additional standards on the outside of the scaffold using

components intended for this purpose. Access stairways must be fitted with double handrails on the outside, with double guardrails in gable sections and toe-boards in lower gable sections. The topmost level must be fitted with a shorter rail towards the stairway. On any level with no adjacent platforms, the landings must be fitted with double safety rails towards the scaffold.

11. The platforms that are used must be type-examined and designed so that they can be safely installed on the scaffold transoms or ledgers and secured against unintentional lifting at both ends.
12. Any system-independent components, such as bridging ledgers, stairways and tube couplers used must be type-examined.

Assembly instructions

The scaffold must be accompanied by the assembly instructions when it is handed over to the user.

Application

The type-examination certificate applies to scaffolding produced by the manufacturer specified on the type-examination certificate using materials, dimensions and designs matching those of the type-controlled example.

The scaffold may not be assembled using components from other scaffolds unless a specific analysis of the resulting load capacity has been conducted.

Load capacity, components

Platforms

For platforms, the following load classes and permissible loads apply for evenly distributed loads.

Type	Length cc-distance (m)	Width (m)	Load class	Maximum permissible extended load (kN/m ²)
Platform with composite board/plywood board 0.61 m with or without hatch and ladder	3.07	0.61	3	2.0 (200 kg/m ²)
	2.57		4	3.0 (300 kg/m ²)
	2.07		5	4.5 (450 kg/m ²)
	≤ 1.57		6	6.0 (600 kg/m ²)
Platform with composite board/plywood board 0.32 m	3.07	0.32	4	3.0 (300 kg/m ²)
	2.57		5	4.5 (450 kg/m ²)
	≤ 2.07		6	6.0 (600 kg/m ²)
Eco Steel 0.32 m	3.07	0.32	3	2.0 (200 kg/m ²)
	2.57		4	3.0 (300 kg/m ²)
	2.07		5	4.5 (450 kg/m ²)
	≤ 1.57		6	6.0 (600 kg/m ²)
Eco Alu 0.32 m	3.07	0.32	3	2.0 (200 kg/m ²)
	2.57		3	3.0 (300 kg/m ²)
	2.07		4	4.5 (450 kg/m ²)
	≤ 1.57		6	6.0 (600 kg/m ²)

Hop-up brackets

When using brackets, the following load classes apply.

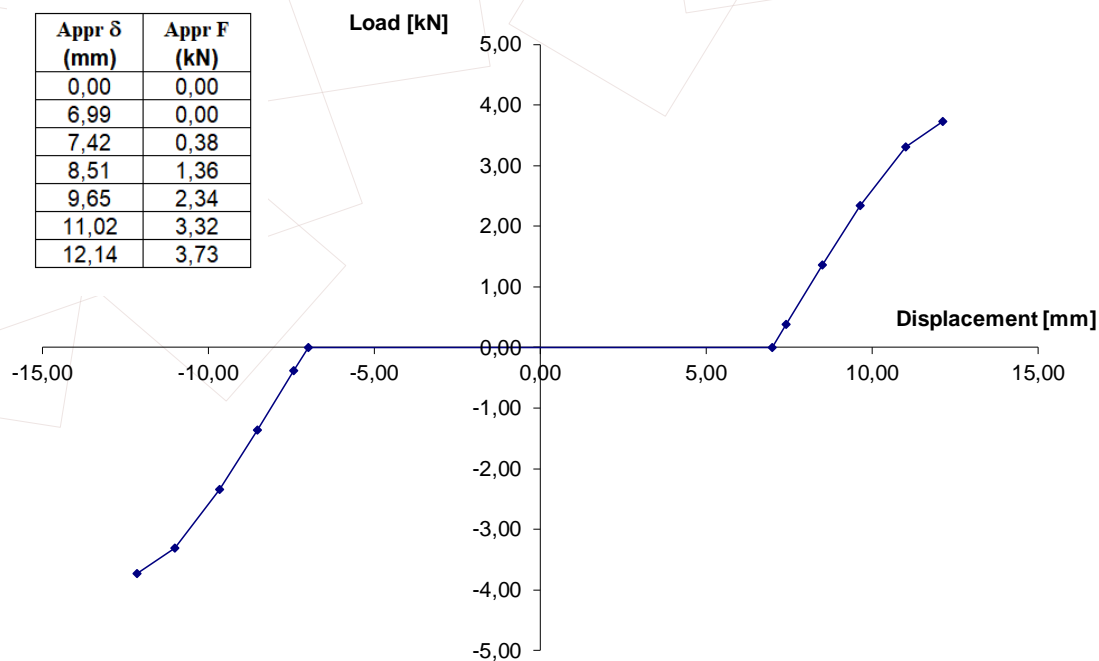
Console	Maximum permissible load distributed over the entire console (kN)	Load class at bay length 3.07 m
Console 0.36 m	11.1	6
Console 0.73 m	7.0	4

Input values for dimensioning

The following values obtained from component testing can be used as input values for determining the load capacity of the scaffold as per SS-EN 12811-1. All specified values are dimensioning values, R_d .

Vertical diagonal brace - Stiffness correlation

Appr δ (mm)	Appr F (kN)
0,00	0,00
6,99	0,00
7,42	0,38
8,51	1,36
9,65	2,34
11,02	3,32
12,14	3,73



The diagram shows the stiffness relationship of the three included vertical diagonals of the scaffold system in its direction.

For input values of the horizontal rotational stiffness determined for the included platforms of the scaffolding system, please refer to RISE report P110215 provided by the certificate holder.