FORMWORK



SAFETY | ERGONOMICS | PRODUCTIVITY | QUALITY

HIGH-PERFORMANCE SAFETY SLAB FORMWORK





TopDalle | High-performance safety slab formwork

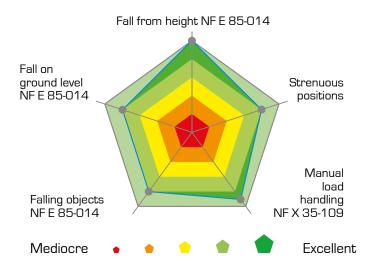




The versatile TopDalle system suits every types of building: offices, housing, residential care homes, correctional facilities, etc.

Simple and quick to install, the TopDalle system offers productivity of 30 m²/person/day at a height of 2.50 m.

Designed by the Alphi R&D office in collaboration with CARSAT Rhône-Alpes, TopDalle formwork is compliant with the decree of September 2004 on falls from height thanks to its anti-tipping system for the secondary frames and controlled spacing of 13 cm between frames.



SAFETY AND ARDUOUSNESS PERFORMANCE CHARACTERISTICS

TopDalle is the best-performing framework of its generation in terms of the constraints of the NF E 85-014 and NF X 35-109 standards.

Site:
Eurêka service hub
Client:
GFC Construction
(Bouygues Group)
Location:
Montpellier

TopDalle | High-performance safety slab formwork



COMPLIANT
WITH DECREE
OF SEPTEMBER 2004
CONCERNING FALLS
FROM HEIGHT

SAFETY

Worker safety

Protection against falling at ground level and falling from height by an anti-tipping system for the C2+ secondary frames and controlled spacing of 13 cm.

Frames are installed and removed from ground level.

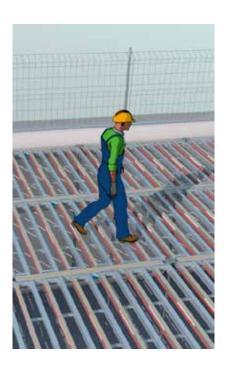
With TopPerche, formwork is installed and removed from ground level up to 3 m (no need for rolling safety ladder depending on heights).

Free-standing system

The unique design of the TopDalle system guarantees optimum stability.

Theft protection

The chemical process developed by Alphi prevents fraudulent recycling.







The installation (and removal) of C2+ frames using the TopPerche provides a dual safety advantage:

- the fitter works at ground level; the risk of falls from height is eliminated.
- controlled 13 cm spacing

ALL TOPDALLE
ELEMENTS HAVE
BEEN TESTED BY
THE INDEPENDENT
LABORATORYLOCIE
AT THE UNIVERSITY
SAVOIE MONT BLANC.

UNIVERSITÉ
SAVOIE
MONT BLANC

ERGONOMICS

Lightest weight per m² formwork on the market

Made of aluminium, the frames and beams contribute to the lightness of the TopDalle hand-portable formwork system.

Less repetitive strain injury

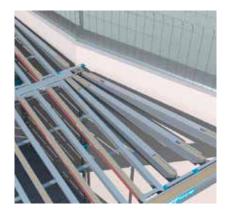
- Better weight distribution.
- Ergonomic handles on the C2+.
- Accommodates 15 mm plywood.

Less noise pollution

Complies with the European noise directive (2003/10/EC dated 6 February 2003).

Easier identification

The beams are colour-coded, in compliance with the layout drawings provided.



PRODUCTIVITY

30 m²/person/day at a height of 2.50 m

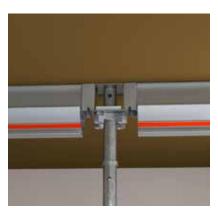
[formwork, adjustment, cladding, and formwork removal]

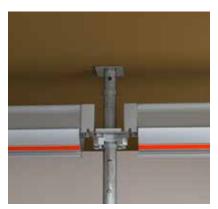
Easy removal

The drop-head for fast removal integrated in the technical support (Alphi patented system) keeps the slab supported during formwork removal. The turnaround of the aluminium structure is accelerated.

Flexible use to satisfy all technical requirements

- "Primary on primary" assembly allows the TopDalle system to adapt to the exact dimensions of the cells.
- The extendable primary beams and secondary corner beams complete the range to handle any complex shape requirements.





QUALITY

Superior concrete soffit quality

Superior quality to DTU 21 guidelines for concrete floors.

Nailing on timber insert

Plywood (15 mm authorised) secured using nails.

Regulations

The beams are designed in compliance with the formwork standard NF P 93-322.

Cast concrete thickness of up to 1.23 m.



The drop-head integrated in the prop allows fast formwork removal without releasing pressure on the slab

3 COMPONENTS FOR SIMPLE SHAPES

1	Technical support (ST) with integrated drop-head	Name	Colour	Height (cm)	Unit weight (kg)	Description
supports		ST1		197-300	18.50	Integrated drop-head for fast removal (patented system) Base web Hot-dip galvanized
Technical su		ST2		221-350	20.50	Cast iron sleeve
F		ST3		250-400	23.50	

2	Primary beam	Name	Colour	Length (cm)	Unit weight (kg)	Description
		PP 90		90	5.40	Theft protection Can be mounted using drawer system 30 mm timber inserts, for nailing on plywood
Primary		PP 110		110	6.60	using 40 mm nails
Ā		PP 150	_	150	9.00	
		PP 180		180	10.80	

3	C2+ and C4+ secondary frames	Name	Colour	Length (cm)	Unit weight (kg)	Description
ary		C2+ 110 C4+ 110	_	110	5.00 8.00	Anti-tip safety Width of 23 cm for C2+ Theft protection Timer inserts for nailing on plywood using
Secondary	Seconda	C2+ 150 C4+ 150		150	6.00 9.50	40 mm neils
		C2+ 180 C4+ 180		180	8.00 11.00	

2 COMPONENTS FOR COMPLEX SHAPES (OPTIONAL)

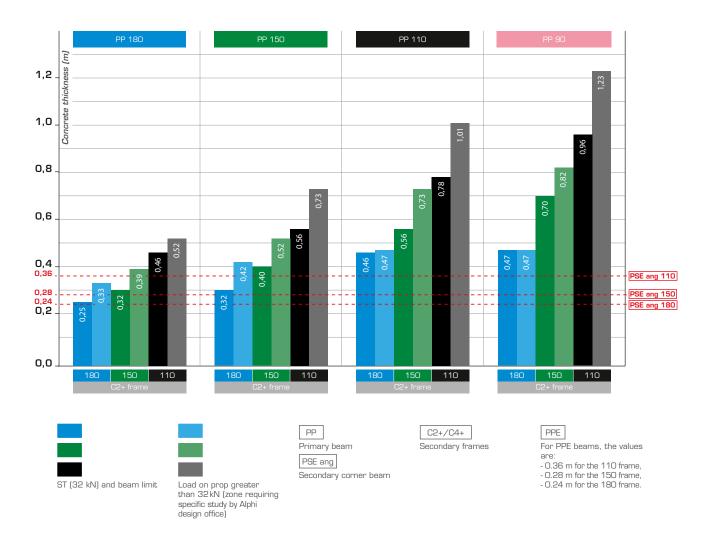
1	Extendable primary beam	Name	Colour	Length (cm)	Unit weight (kg)	Description
Primary	MA COVATION	PPE 90-110		90-110	8.10	From 90 to 110 cm, to adapt to all cell sizes Can be mounted using drawer system Continuous resting of secondary beams on primary beam

2	Extendable secondary corner beam	Name	Colour	Length (cm)	Unit weight (kg)	Description
ary	III OVATION	PSE ang 110		110-135	5.40	Modular orientation as close as possible to the concrete skin by rotating the tip Working angles of 0° to 35°
Secondary		PSE ang 150	_	150-180	6.60	Each secondary corner beam must be associated with the secondary beam of the same size (e.g.: PSE ang 110 with PS 110)
		PSE ang 180		180-220	7.50	Adjustable length Timber inserts for nailing on plywood

USE CALCULATION CHARTS

Beams

Value given for superior quality as per DTU 21 guidelines for concrete floors, accounting for the site load $[2.5 \text{ kN/m}^2]$. Maximum deflection L/400.



ST technical supports with integrated drop-head

Name	Colour	Height (cm)	Weight (kg)	Shored height [m] / Working load (kN)																					
		min-max		1.9	2.0	2.1	2.2	2.3	2.4	2.5	2.6	2.7	2.8	2.9	3.0	3.1	3.2	3.3	3.4	3.5	3.6	3.7	3.8	3.9	4.0
ST1		197-300	18.5	40	39	38	37	36	35	35	34	33	33	32	32										
ST2		221-350	20.5				40	39	39	38	37	36	36	35	35	34	34	33	32	32					
ST3		250-400	23.5							40	39	39	38	37	37	36	35	34	34	33	33	33	32	32	32

 $\hbox{Hot-dip galvanized - Sleeve or nut colour coding - As per Eurocode safety coefficients 0 and 3.}\\$

TOPDALLE ACCESSORIES

	Me	sh*	Dimensions w x h (m)	Weight (kg)	Description
			1.25 x 1.30	7.60	The wire mesh is galvanized, with polyester powder coating
			2.40 x 1.30	13.90	
	Alphis	Safe	2.50 x 1.30	14.50	
	Galvanize	ed post*	Cross-section (cm²)	Height (m)	Weight (kg)
Safety			3.5 x 3.5	1.34	3.50
	Alphi formwo	rk adapters*	Weight (kg)	Weight (kg)	
	Primary adapter	Prop adapter	Primary adapter	Prop adapter	
	4		2.30	2.10	*Compliant with EN 13374 standard
					EN 133/4 standard

	Electrogalvanise	Bores (mm)	Height (cm)	Unit weight (kg)	Maximum allowable load (kN)		
Additional	Ţ	4 x Ø12 x 80	33	3.80	40		
Addit	Bracket	Non-tilt safety fork (FSAB)	Unit weight bracket (kg)	Maximum allowable load (kN)	Unit weight FSAB (kg)	Tube diameter (mm)	Description
	Y		1.05	3.5	1.150	35	Bracket: butterfly fastening nut FSAB: hammer head screw

E	TopPerche	Length (cm)	Unit weight (kg)	Description
Installation fro ground level		150	1.80	Work from ground level Risk of falls from height eliminated Controlled spacing of 13 cm Compatible with C2+ frames

TOPDALLE ACCESSORIES

	Nanovib [®] range	Description
Leborgne tools		Tools suitable for fitting and removing Alphi formwork: hammers, hammer holder, prop key Vibration and noise reduction Alphi distributes Leborgne Click here to view details of Leborgne Tools

	Racks	Ranges				
Handling		Vertical storage rack Galvanized rack on wheels Galvanized handling rack Click here to view details of racks				
Han	TransEtais Housing	Description				
		Easier prop handling Makes it possible to pass through door openings Click here to view details of TransEtais Housing				

	Plywood cutting support	Dimensions W x L x H (m)	Description
or use		1.40 x 2.06 x 0.86	For sale only Circular saw kit and electrical extension available as an option
Aids for use	Rolling safety ladder	Working height (m)	Description
		2.50 to 4.33	• For sale only

ALPHISAFE COLLECTIVE PROTECTION

AlphiSafe is a collective protection system for formwork and slab edges.

The technical innovations in the system allow safe installation and automatic locking.

locking.
Robust AlphiSafe is certified by Ginger CEBTP, as per the EN 13374 standard of July 2013, as class A and B for some components.

AlphiSafe is distinguished by its **height** of 1.30 m, which is above the minimum height of 1.00 m set by the standard, and protects traditional slab formwork up to 30 cm thick.



The mesh is locked at the top by the anti-lifting pin and locked in rotation at the base.

Installation of AlphiSafe safety system in cantilever configuration







Installation of AlphiSafe safety system on technical support (progressive fitting)







CLAMPING

Depending on the configuration, stabilisation may be recommended.

Contact our Design Office to validate the solution. The different systems are featured below.

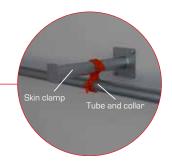
Skin clamp



- Skin clamp + tube system.



- Set up the stabilisation of the first components. Once stabilised, the tripods can be removed.



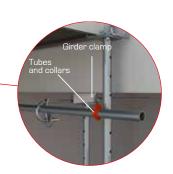
Girder clamp



- Girder clamp + tube system.



- Set up the stabilisation of the first components. Once stabilised, the tripods can be removed.



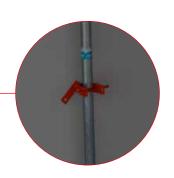
Prop clamp



- Prop clamp to be driven into the wall with concrete screws.



- This clamp can be fitted before or after positioning the prop.



Prop frame



- The prop frame can be used to join 4 props with a rigid connection.



- Position the 4 props as desired then fasten the prop frame.



WARNING

- To use our products safely, please observe the regulations in force in each country
- The elements and set-ups presented in this brochure match the characteristics of the equipment on the date of publication of the document. There might have been some changes since then.
- The use of our systems in combination with systems from other manufacturers may involve some risk, and would require special inspection.
- Before starting to set up, remember to secure the area.





Click **here** or scan the QR code to view the video of the procedure.

PREPARATORY STAGE





N.B.: even if they are not always shown in the image, TopDalle is to be installed by 2 form fitters.

- Reception of equipment on the worksite: check quantities and validate delivery note.
- Precise distribution of the equipment according to the first phases of formwork defined by the layout drawing.
- Adjustment of prop height and positioning of formwork heads in formed position: locking with hammer.

USER GUIDE: FORMWORK



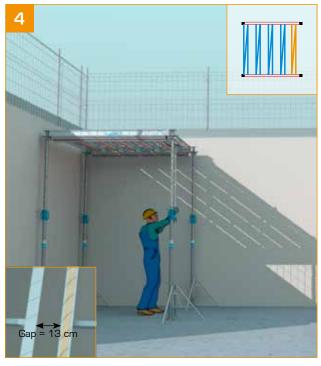
- Starting from one corner of the room, mount one primary beam on 2 technical supports (ST) stabilised by tripods.
 Mount a second primary beam on 2 STs stabilised by tripods.
 Use a rolling safety ladder in compliance with the regulations.
 Caution: engage the primary beams on the large bushings of the technical support.
- → Refer to the layout plan.



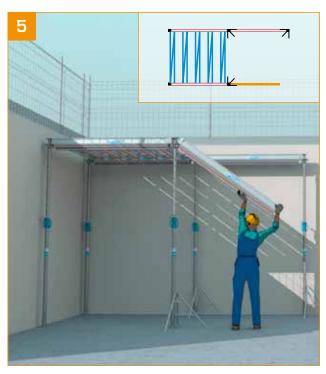
- Mount the C2+ secondary frames using TopPerche.
- → Observe the layout plan.



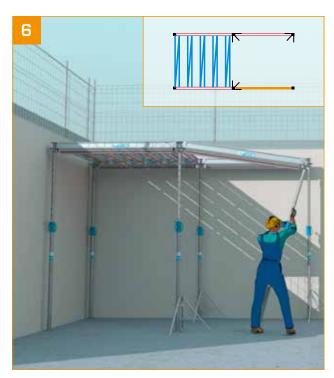
- Start mounting a C2+ or C4+ secondary frame.
 The fitter lifts the frame between the 2 primary beams then lowers the TopPerche ensuring that the frame tips are engaged on the primary beams.



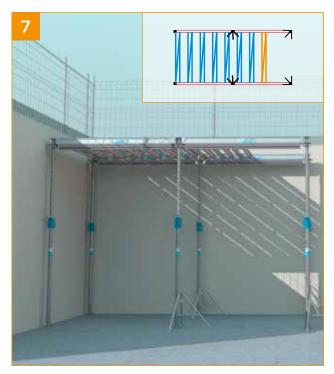
- Position the C2+ frames from one to the next using the TopPerche. Do not exceed a gap of 13 cm between each frame.



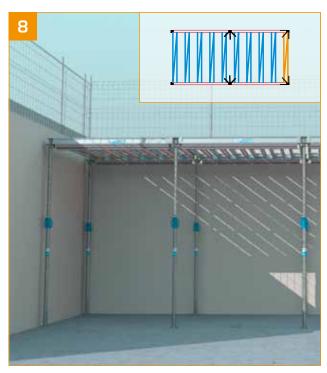
- Mount a primary beam on ST stabilised by tripods.



 $\mbox{-}$ The fitter uses the prop to position the primary beam.



- Adjust the position of the C2+ or C4+ secondary frames.



- Finish setting up the C2+ or C4+ secondary frames.

USER GUIDE: FORMWORK

EXTENDABLE BEAM ADJUSTMENT



- Release the beam by unfastening the butterfly screw.

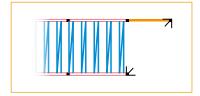


- Adjust the beam to the desired size.

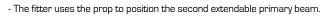


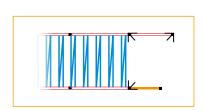
- Lock the beam by fastening the butterfly screw.





- Close to the wall, mount the extendable primary beam on stabilised props.
 The extendable primary beam should be adjusted and locked prior to mounting.





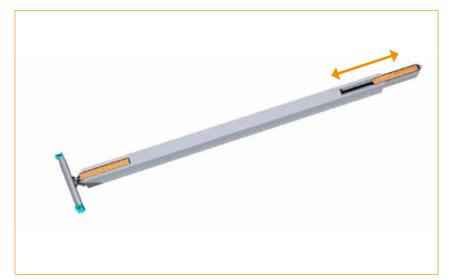
USER GUIDE: FORMWORK

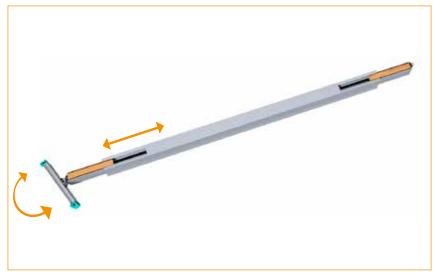
EXTENDABLE SECONDARY CORNER BEAM ADJUSTMENT



- An extendable secondary corner beam is associated with a C2+ or C4+ frame type.
 The colour code of the extendable secondary corner beam matches that of the panel for easy identification.
 A symmetrical extension deployment length is preferable.
 The wide tip, including four bearing areas, promotes stability.
 The installation procedure involves joining the wide tips to apply a 19 cm gap.

C2+ and C4+ secondary frames	Extendable secondary corner beams	Colour
110	PSE ang 110	
150	PSE ang 150	
180	PSE ang 180	







- Mount the secondary corner beam.



- The hinged heads of the secondary corner beam can be adapted to all configurations.

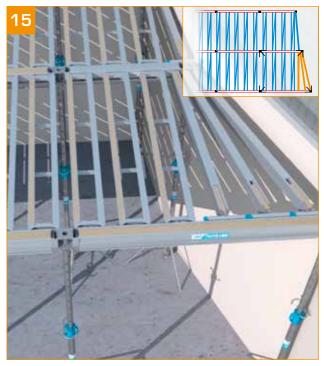


- Adjust the position of the C2+ or C4+ secondary frames.



- Continue to mount the C2+ progressively using the TopPerche, or C4+ frames from one to the next.

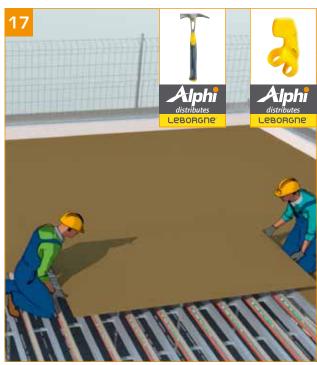
USER GUIDE: FORMWORK, FINISHING & CASTING



- Repeat step 6 and finish setting up the C2+ or C4+ secondary frames.



- Adjust the level using a laser level, ST by ST.
 A gauge stick hanging from the formwork allows laser adjustment to be performed by one person.
 Conduct a final head locking check at this stage.



- When the structure is finished and the height has been adjusted: lay
- the plywood.

 Use the plywood cutting support (see Accessories p. 9-10).
- → Peripheral safety (skin, girder, etc.) ensured beforehand.
- → Use of the plywood cutting support.



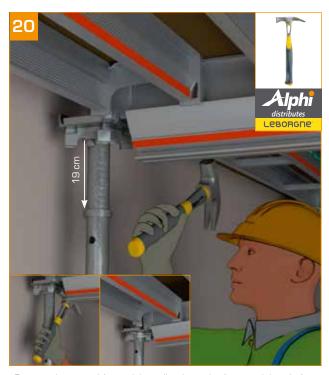
- Nailing using 40 mm [max.] nails. Ensure that a load-bearing member is present under the plywood
- sheet joins.

 Check the sealing of the formwork between plywood sheets and at the edges. It is prohibited to walk on the plywood panels, with the exception of trained personnel authorised to fit plywood panels.

USER GUIDE: FINISHING & CASTING, FORMWORK REMOVAL



- Concrete slab formation after reinforcement and incorporations.
- → Spread the concrete on the formwork without overloading the beams and the technical supports.



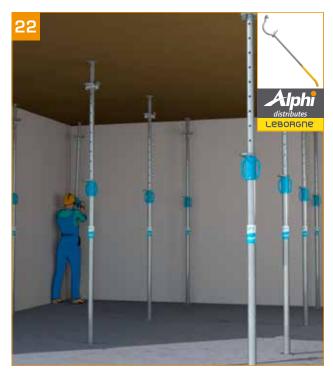
- Formwork removal from slab: strike down the formwork heads from the STs as you progress.

 The primary beams and the C2+ or C4+ frames drop by 19 cm.
 The STs remain in position.



- Formwork removal from slab: remove the C2+ frames and finally the primary beams as you progress using the TopPerche.

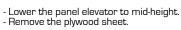
 - Store them in the wheeled racks.



- Formwork removal from slab: remove the STs placed at the edge of the cells.
 Leave the other STs in place for at least 3 days (depending on the type of concrete and the external temperature).

USER GUIDE: FORMWORK REMOVAL







- Install the first drying prop, allowing one prop per 5 $\ensuremath{\text{m}}^2$ (general case).



- Repeat steps 23 and 24.



- For the higher level, repeat the operations from step 1.

SPECIAL CASES

REDUCED GAP

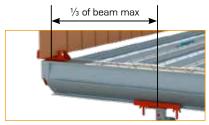


- Use the fork under the primary beam (mounted without using fast formwork removal).
 The fork allows you to position the STs under the primary beams and not at the ends, thus offering additional adjustment.

HANDLING FACE OVERHANGS

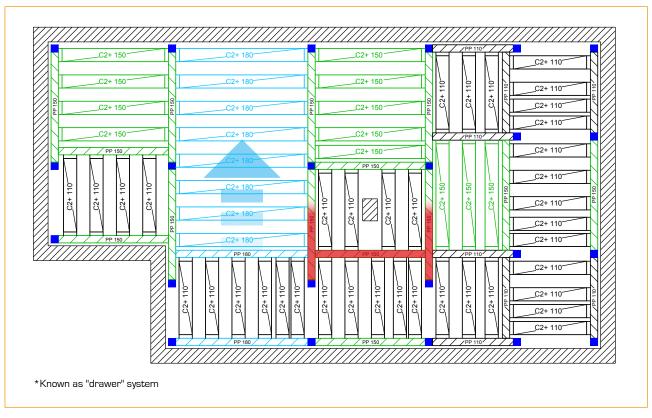


- Use in cantilever configuration with fork and bracket.
- Steps:
- 1 mount the bracket on the prop
- 2 install the prop
- 3 position the fork in the desired place
- 4 attach the primary beam to the prop, with the tip in the bracket
- 5 raise the beam, positioning a prop in the fork



SPECIAL APPLICATION

PRECISE ADAPTABILITY TO CELL DIMENSIONS'



Drawer mounting consists of a primary beam resting in the grooves of two perpendicular primary beams.

TOPDALLE FORMWORK INSTALLATION AT EXTRA-HIGH HEIGHTS



- Starting from one corner of the room, mount 4 technical supports (ST) stabilised by a prop frame.
 Mount the first two primary beams.
 Store the plywood panels on the floor or in wheeled racks.
 Use the rolling safety ladder in compliance with regulations.

- → Refer to the layout plan.



- Do not leave gaps greater than 13 cm. Use a template to ensure compliance with 13 cm spacing.
- → Observe the layout plan.

TOPDALLE FORMWORK INSTALLATION AT EXTRA-HIGH HEIGHTS



- Finish setting up the secondary frames.



- Do not leave gaps greater than 13 cm. Use a template to ensure compliance with 13 cm spacing.
- → Observe the layout plan.

PRIMARY BEAM GRID

GRID FOR PRIMARY BEAMS FROM 0 TO 10 M				
P180	P150	P110	P90	Distance between walls (cm)
0	0	0	1	120
0	0	1	0	140
0	1	0	0	180
1	0	0	0	210
0	0	0	2	220
0	0	1	1	240
0	0	2	0	260
0	1	0	1	280
0	1	1	0	300
1	0	0	1	310
0	0	0	3	320
1	0	1	0	330
0	2	0	0	340
0	0	1	2	340
0	0	2	1	360
1	1	0	0	370
0	1	0	2	380
0	0	3	0	380
2	0	0	0	400
0	1	1	1	400
1	0	0	2	410
0	1	2	0	420
0	0	0	4	420
1	0	1	1	430
0	2	0	1	440
0	0	1	3	440
1	0	2	0	450
0	2	1	0	460
0	0	2	2	460
1	1	0	1	470
0	1	0	3	480
0	0	3	1	480
1	1	1	0	490
2	0	0	1	500
0	3	0	0	500
0	1	1	2	500
0	0	4	0	500
1	0	0	3	510
2	0	1	0	520
	1	2	1	520
0	0	0	5	520
1	2	0	0	530
1	0	1	2	530
0	2	0	2	540
0	1	3	0	540
0	0	1	4	540
1	0	2	1	550
2	1	0	0	560
0	2	1	1	560
0	0	2	3	560

P180	P150	P110	P90	Distance between walls (cm)
1	1	0	2	570
1	0	3	0	570
0	2	2	0	580
0	1	0	4	580
0	0	3	2	580
3	0	0	0	590
1	1	1	1	590
2			2	
	0	0		600
0	3	0	1	600
0	1	1	3	600
0	0	4	1	600
1	1	2	0	610
1	0	0	4	610
2	0	1	1	620
0	3	1	0	620
0	1	2	2	620
0	0	5	0	620
0	0	0	6	620
1	2	0	1	630
1	0	1	3	630
2	0	2	0	640
0	2	0	3	640
0	1	3	1	640
0	0	1	5	640
1	2	1	0	650
1	0	2	2	650
2	1	0	1	660
0	4	0	0	660
0	2	1	2	660
0	1	4	0	660
0	0	2	4	660
1	1	0	3	670
1	0	3	1	670
2	1	1	0	680
0	2	2	1	680
0	1	0	5	680
0	0	3	3	680
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1	3	0	0	690
1	1	1	2	690
1	0	4	0	690
2	0	0	3	700
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PRIMARY BEAM GRID

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0 0 2 5 7	'60
1 2 2 0 7	'70
1 1 0 4 7	'70
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4 0 0 0 7	'80
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1 0 5 0 8	310
1 0 0 6 8	310
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2 0 1 3 8	20
0 5 0 0 8	120
0 3 1 2 8	320
	320
	320
	120
	320

3 0 2 0 830 1 2 0 3 830 1 1 1 3 1 830 1 0 1 5 830 2 2 1 0 840 2 0 2 2 840 0 3 2 1 840 0 2 0 5 840 0 1 3 3 840 0 0 6 1 840 0 0 1 7 840 3 1 0 1 850 1 4 0 0 850 1 2 1 2 850 1 4 0 0 850 1 1 4 0 850 1 1 4 0 850 2 1	P180	P150	P110	P90	Distance between walls (cm)
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2 2 1 0 840 2 0 2 2 840 0 3 2 1 840 0 2 0 5 840 0 1 3 3 840 0 0 1 7 840 3 1 0 1 850 1 4 0 0 850 1 2 1 2 850 1 1 4 0 0 850 1 1 1 4 0 850 1 1 1 4 0 850 2 1 0 3 860 850 2 1 0 3 860 860 2 1 0 2 860 860 0 1 4 2 860 860 0 0	1	1	3	1	830
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0 2 0 5 840 0 1 3 3 840 0 0 6 1 840 0 0 1 7 840 3 1 0 1 850 1 4 0 0 850 1 1 2 1 2 850 1 1 4 0 0 850 1 1 4 0 850 9 1 1 4 0 850 9 1 1 4 0 850 9 2 1 0 3 860 9 2 1 4 860 9 9 0 2 1 4 860 9 0 1 4 2 860 9 0 0 7 0 860 9 <td>2</td> <td>0</td> <td>2</td> <td>2</td> <td>840</td>	2	0	2	2	840
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0 0 1 7 840 3 1 0 1 850 1 4 0 0 850 1 2 1 2 850 1 1 4 0 850 1 0 2 4 850 2 1 0 3 860 2 0 3 1 860 0 4 0 2 860 0 3 3 0 860 0 2 1 4 860 0 1 4 2 860 0 0 7 0 860 0 0 7 0 860 3 1 1 0 870 1 2 2 1 870 1 1 2 2 1 880 2 3	0	1	3	3	840
3 1 0 1 850 1 4 0 0 850 1 2 1 2 850 1 1 4 0 850 1 0 2 4 850 2 1 0 3 860 2 0 3 1 860 0 4 0 2 860 0 3 3 0 860 0 1 4 2 860 0 1 4 2 860 0 1 4 2 860 0 0 7 0 860 0 0 2 6 860 3 1 1 0 870 1 1 2 2 1 870 1 1 0 3 870 1 1	0	0	6	1	840
1 4 0 0 850 1 2 1 2 850 1 1 4 0 850 1 0 2 4 850 2 1 0 3 860 2 0 3 1 860 0 4 0 2 860 0 3 3 0 860 0 2 1 4 860 0 1 4 2 860 0 1 4 2 860 0 0 7 0 860 3 1 1 0 870 1 2 2 1 870 1 1 2 2 1 870 1 1 2 3 870 1 1 2 380 880 2 1	0	0	1	7	840
1 2 1 2 850 1 1 4 0 850 1 0 2 4 850 2 1 0 3 860 2 0 3 1 860 0 4 0 2 860 0 3 3 0 860 0 1 4 2 860 0 1 4 2 860 0 1 4 2 860 0 1 4 2 860 0 1 4 2 860 0 0 2 6 860 0 0 2 6 860 0 0 2 6 860 3 1 1 0 870 1 1 0 5 870 1 1 1	3	1	0	1	850
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1 0 2 4 850 2 1 0 3 860 2 0 3 1 860 0 4 0 2 860 0 3 3 0 860 0 2 1 4 860 0 0 7 0 860 0 0 2 6 860 0 0 2 6 860 3 1 1 0 870 1 2 2 1 870 1 1 0 5 870 1 1 0 5 870 1 1 0 5 870 1 1 0 5 870 1 1 0 0 880 2 1 1 2 880 2 1 1	1	2	1	2	850
2 1 0 3 860 2 0 3 1 860 0 4 0 2 860 0 3 3 0 860 0 1 4 2 860 0 0 7 0 860 0 0 2 6 860 3 1 1 0 870 1 2 2 1 870 1 1 0 5 870 1 1 0 5 870 1 1 0 5 870 1 1 0 3 3 870 4 0 0 1 880 2 3 0 0 880 2 1 1 1 880 0 1 5 1 880 0 1	1	1	4	0	850
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0 3 3 0 860 0 2 1 4 860 0 1 4 2 860 0 0 7 0 860 0 0 2 6 860 3 1 1 0 870 1 2 2 1 870 1 1 0 5 870 1 1 0 5 870 1 1 0 5 870 1 1 0 5 870 1 1 0 3 870 4 0 0 1 880 2 3 0 0 880 2 1 1 1 880 0 2 2 3 880 0 1 5 1 880 0 0 3	2	0	3	1	860
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0 1 4 2 860 0 0 7 0 860 0 0 2 6 860 3 1 1 0 870 1 2 2 1 870 1 1 0 5 870 1 1 0 5 870 1 1 0 5 870 1 1 0 5 870 1 1 0 5 870 1 1 0 0 880 2 3 0 0 880 2 1 1 1 880 3 0 2 2 3 880 0 1 5 1 880 0 1 5 1 880 3 0 0 3 890 1 2	0	3	3	0	860
0 0 7 0 860 0 0 2 6 860 3 1 1 0 870 1 2 2 1 870 1 1 0 5 870 1 0 3 3 870 4 0 0 1 880 2 3 0 0 880 2 1 1 2 880 2 1 1 2 880 2 0 4 0 880 0 4 1 1 880 0 2 2 3 880 0 1 5 1 880 0 1 0 7 980 0 0 3 5 880 3 0 0 3 890 1 1 1	0	2	1	4	860
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3 1 1 0 870 1 2 2 1 870 1 1 0 5 870 1 0 3 3 870 4 0 0 1 880 2 3 0 0 880 2 1 1 2 880 2 0 4 0 880 2 0 4 0 880 2 0 4 0 880 3 0 2 2 3 880 0 1 5 1 880 0 1 5 1 880 3 0 0 3 5 880 3 0 0 3 890 1 1 1 4 890 1 1 1 4 890 1	0	0	7	0	860
1 2 2 1 870 1 1 0 5 870 1 0 3 3 870 4 0 0 1 880 2 3 0 0 880 2 1 1 2 880 2 0 4 0 880 0 4 1 1 880 0 2 2 3 880 0 1 5 1 880 0 1 5 1 880 0 1 5 1 880 3 0 0 3 890 1 3 0 2 890 1 2 3 0 890 1 1 1 4 890 1 1 1 4 890 1 1 1	0	0	2	6	860
1 1 0 5 870 1 0 3 3 870 4 0 0 1 880 2 3 0 0 880 2 1 1 2 880 2 0 4 0 880 0 4 1 1 880 0 4 1 1 880 0 2 2 3 880 0 1 5 1 880 0 1 0 7 880 3 0 1 0 7 880 3 0 0 3 890 1 3 0 2 890 1 2 3 0 890 1 1 1 4 890 1 1 1 4 890 4 0 1 0 900 2 1 2 1 900	3	1		0	870
1 0 3 3 870 4 0 0 1 880 2 3 0 0 880 2 1 1 2 880 2 0 4 0 880 0 4 1 1 880 0 2 2 3 880 0 1 5 1 880 0 1 0 7 880 0 1 0 7 880 0 0 3 5 880 3 0 0 3 890 1 3 0 2 890 1 2 3 0 890 1 1 1 4 890 1 1 1 4 890 2 1 2 1 900 2 1 2 1 900 2 1 2 1 900 2	1	2	2	1	870
4 0 0 1 880 2 3 0 0 880 2 1 1 2 880 2 0 4 0 880 0 4 1 1 880 0 2 2 3 880 0 1 5 1 880 0 1 0 7 880 0 0 3 5 880 3 0 0 3 890 1 3 0 2 890 1 2 3 0 890 1 1 4 890 1 1 4 890 1 1 4 890 2 1 2 1 900 2 1 2 1 900 2 1 2 1 900 0 4 2 900 0 3 2 900	1	1	0	5	
2 3 0 0 880 2 1 1 2 880 2 0 4 0 880 0 4 1 1 880 0 2 2 3 880 0 1 5 1 880 0 1 0 7 880 0 0 3 5 880 3 0 0 3 890 1 3 0 2 890 1 2 3 0 890 1 1 1 4 890 1 1 1 4 890 1 0 4 2 890 4 0 1 0 900 2 1 2 1 900 2 1 2 1 900 2 0 0 900 900 0 1 6 0 900 <td< td=""><td>1</td><td>0</td><td>3</td><td>3</td><td>870</td></td<>	1	0	3	3	870
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0 2 2 3 880 0 1 5 1 880 0 1 0 7 880 0 0 3 5 880 3 0 0 3 890 1 3 0 2 890 1 1 1 4 890 1 1 1 4 890 1 0 4 2 890 4 0 1 0 900 2 1 2 1 900 2 1 2 1 900 2 0 0 5 900 0 4 2 0 900 0 3 0 4 900 0 1 6 0 900 0 1 6 0 900 0 1 6	2	0	4	0	880
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1 1 1 4 890 1 0 4 2 890 4 0 1 0 900 2 1 2 1 900 2 0 0 5 900 0 4 2 0 900 0 3 0 4 900 0 2 3 2 900 0 1 6 0 900 0 1 1 6 900 0 0 4 4 900 3 2 0 0 910	1	3	0	2	890
1 0 4 2 890 4 0 1 0 900 2 1 2 1 900 2 0 0 5 900 0 4 2 0 900 0 3 0 4 900 0 2 3 2 900 0 1 6 0 900 0 1 1 6 900 0 0 4 4 900 3 2 0 0 910	1	2	3	0	890
4 0 1 0 900 2 1 2 1 900 2 0 0 5 900 0 4 2 0 900 0 3 0 4 900 0 2 3 2 900 0 1 6 0 900 0 1 1 6 900 0 0 4 4 900 3 2 0 0 910	1	1	1	4	890
2 1 2 1 900 2 0 0 5 900 0 4 2 0 900 0 3 0 4 900 0 2 3 2 900 0 1 6 0 900 0 1 1 6 900 0 0 4 4 900 3 2 0 0 910	1	0	4	2	890
2 0 0 5 900 0 4 2 0 900 0 3 0 4 900 0 2 3 2 900 0 1 6 0 900 0 1 1 6 900 0 0 4 4 900 3 2 0 0 910	4	0	1	0	
0 4 2 0 900 0 3 0 4 900 0 2 3 2 900 0 1 6 0 900 0 1 1 6 900 0 0 4 4 900 3 2 0 0 910	2	1	2	1	900
0 4 2 0 900 0 3 0 4 900 0 2 3 2 900 0 1 6 0 900 0 1 1 6 900 0 0 4 4 900 3 2 0 0 910		0		5	
0 3 0 4 900 0 2 3 2 900 0 1 6 0 900 0 1 1 6 900 0 0 4 4 900 3 2 0 0 910	0	4	2	0	
0 2 3 2 900 0 1 6 0 900 0 1 1 6 900 0 0 4 4 900 3 2 0 0 910	0	3		4	
0 1 6 0 900 0 1 1 6 900 0 0 4 4 900 3 2 0 0 910	0	2	3	2	900
0 1 1 6 900 0 0 4 4 900 3 2 0 0 910					
0 0 4 4 900 3 2 0 0 910					
3 2 0 0 910		0	4		
			0	0	
	3	0	1	2	910

P180	P150	P110	P90	Distance between walls (cm)
1	3	1	1	910
1	1	2	3	910
1	0	5	1	910
1	0	0	7	910
2	2	0	2	920
2	1	3	0	920
2	0	1	4	920
0	5	0	1	920
0	3	1	3	920
0	2	4	1	920
0	1	2	5	920
0	0	5	3	920
0	0	0	9	920
3	0	2	1	930
1	3	2	0	930
1	2	0	4	930
1	1	3	2	930
1	0	6	0	930
1	0	1	6	930
4	1	0	0	940
2	2	1	1	940
2	0	2	3	940
0	5	1	0	940
0	3	2	2	940
0	2	5	0	940
0	2	0	6	940
0	1	3	4	940
0	0	6	2	940
0	0	1	8	940
3	1	0	2	950
3	0	3	0	950
1	4	0	1	950
1	2	1	3	950
1	1	4	1	950
1	0	2	5	950
2	2	2	0	960
2	1	0	4	960
2	0	3	2	960
0	4	0	3	960
0	3	3	1	960
0	2	1	5	960
0	1	4	3	960
0	0	7	1	960
0	0	2	7	960
5	0	0	0	970
3	1	1	1	970
1	4	1	0	970
1	2	2	2	970
1	1	5	0	970
1	1	0	6	970
1	0	3	4	970
4	0	0	2	980
2	3	0	1	980
	l	<u> </u>	<u> </u>	

P180	P150	P110	P90	Distance between walls (cm)
2	1	1	3	980
2	0	4	1	980
0	6	0	0	980
0	4	1	2	980
0	3	4	0	980
0	2	2	4	980
0	1	5	2	980
0	1	0	8	980
0	0	8	0	980
0	0	3	6	980
3	1	2	0	990
3	0	0	4	990
1	3	0	3	990
1	2	3	1	990
1	1	1	5	990
1	0	4	3	990
4	0	1	1	1000
2	3	1	0	1000
2	1	2	2	1000
2	0	5	0	1000
2	0	0	6	1000

C2+ AND C4+ FRAME GRID

C+180 C+150 C+110 between wells (cm) 0 0 1 140 0 1 0 180 1 0 0 210 0 0 2 260 0 0 1 330 1 0 1 330 0 2 0 340 1 1 0 370 0 2 0 340 1 1 0 370 0 0 3 380 2 0 0 400 0 1 2 420 1 0 2 450 2 0 0 400 0 1 2 420 1 1 1 460 1 1 1 490 0 3 0 500 0 1 3 <td< th=""><th colspan="5">GRID FOR C2+ and C4+ FRAMES FROM 0 TO 10 M</th></td<>	GRID FOR C2+ and C4+ FRAMES FROM 0 TO 10 M				
0 1 0 180 1 0 0 210 0 0 2 260 0 1 1 300 1 0 1 330 0 2 0 340 1 1 0 370 0 0 3 380 2 0 0 400 0 0 400 400 0 0 400 400 0 1 2 420 1 0 2 450 0 2 1 460 1 1 1 460 1 1 1 490 0 3 0 500 0 4 500 500 0 0 4 500 2 0 1 3 540 2 1 0 5	C+180	C+150	C+110	between walls	
1 0 0 2 260 0 1 1 300 1 0 1 330 0 2 0 340 1 1 0 370 0 0 3 380 2 0 0 400 0 1 2 420 1 0 2 450 0 1 2 420 1 0 2 450 0 1 2 420 1 1 0 2 450 0 2 1 460 450 1 1 1 490 500 0 2 1 460 500 0 0 4 500 500 1 1 2 0 530 1 1 2 0 530 1 1	0	0	1	140	
0 0 2 260 0 1 1 300 1 0 1 330 0 2 0 340 1 1 0 370 0 0 3 380 2 0 0 400 0 1 2 420 1 1 2 420 1 1 2 420 1 1 4 420 1 1 4 420 1 1 4 420 1 1 4 420 1 1 1 4 460 0 2 1 4 450 0 3 0 500 500 1 1 2 0 530 1 1 2 1 540 2 1 3 570 560 </td <td>0</td> <td>1</td> <td>0</td> <td>180</td>	0	1	0	180	
0 1 1 300 1 0 1 330 0 2 0 340 1 1 0 370 0 0 3 380 2 0 0 400 0 1 2 420 1 0 2 450 0 2 1 460 1 1 1 490 0 2 1 460 1 1 1 490 0 3 0 500 0 0 4 500 0 0 4 500 2 0 1 520 1 2 0 530 1 1 2 0 530 1 2 0 580 1 1 0 560 1 1 2 580 <td>1</td> <td>0</td> <td>0</td> <td>210</td>	1	0	0	210	
1 0 1 330 0 2 0 340 1 1 0 370 0 0 3 380 2 0 0 400 0 1 2 420 1 0 2 450 0 2 1 480 1 1 1 480 1 1 1 480 0 2 1 480 1 1 1 480 0 3 0 500 0 3 0 500 0 4 500 500 1 2 0 530 3 540 550 530 4 0 560 560 1 1 0 560 1 1 2 580 3 0 0 590	0	0	2	260	
0 2 0 340 1 1 0 370 0 0 3 380 2 0 0 400 0 1 2 420 1 0 2 450 0 2 1 460 1 1 1 490 0 3 0 500 0 3 0 500 0 0 4 500 2 0 1 520 1 2 0 530 0 1 3 540 2 1 0 560 1 0 3 570 0 2 2 580 3 0 0 590 1 1 2 610 0 3 1 620 2 0 2 640 <tr< td=""><td>0</td><td>1</td><td>1</td><td>300</td></tr<>	0	1	1	300	
1 1 0 370 0 0 3 380 2 0 0 400 0 1 2 420 1 0 2 450 0 2 1 460 1 1 1 490 0 3 0 500 0 0 4 500 2 0 1 520 0 0 4 500 2 0 1 520 1 2 0 530 0 1 3 540 2 1 0 560 1 0 3 570 0 2 2 580 3 0 0 590 1 1 2 610 0 3 1 620 0 2 640 1 2 1 650 0 4 660 660	1	0	1	330	
0 0 3 380 2 0 0 400 0 1 2 420 1 0 2 450 0 2 1 460 1 1 1 490 0 3 0 500 0 0 4 500 2 0 1 520 1 2 0 530 0 1 3 540 2 1 0 560 1 0 3 570 0 2 2 580 3 0 0 590 1 1 2 610 0 3 1 620 2 0 2 640 1 2 1 650 0 4 0 660 0 1 4 660 <tr< td=""><td>0</td><td>2</td><td>0</td><td>340</td></tr<>	0	2	0	340	
2 0 0 400 0 1 2 420 1 0 2 450 0 2 1 460 1 1 1 490 0 3 0 500 0 0 4 500 2 0 1 520 1 2 0 530 0 1 3 540 2 1 0 560 1 0 3 570 0 2 2 580 3 0 0 590 1 1 2 610 0 3 1 620 0 0 5 620 2 0 2 640 1 2 1 650 0 4 0 660 0 1 4 660 2 1 1 680 1 3 0 690 <td>1</td> <td>1</td> <td>0</td> <td>370</td>	1	1	0	370	
0 1 2 420 1 0 2 450 0 2 1 460 1 1 1 490 0 3 0 500 0 0 4 500 2 0 1 520 1 2 0 530 0 1 3 540 2 1 0 530 3 540 0 560 1 0 3 570 0 2 2 580 3 0 0 590 1 1 2 610 0 3 1 620 0 0 5 620 2 0 2 640 1 2 1 650 0 4 0 660 0 1 4 660 2 1 1 680 1 3 0 690<	0	0	3	380	
1 0 2 450 0 2 1 460 1 1 1 490 0 3 0 500 0 0 4 500 2 0 1 520 1 2 0 530 0 1 3 540 2 1 0 560 1 0 3 570 0 2 2 580 3 0 0 590 1 1 2 610 0 3 1 620 0 0 5 620 2 0 2 640 1 2 1 650 0 4 0 660 0 1 4 660 2 1 1 680 1 3 0 690 1 0 4 690 2 2 0 720 <td>2</td> <td>0</td> <td>0</td> <td>400</td>	2	0	0	400	
0 2 1 460 1 1 1 490 0 3 0 500 0 0 4 500 2 0 1 520 1 2 0 530 0 1 3 540 2 1 0 560 1 0 3 570 0 2 2 580 3 0 0 590 1 1 2 610 0 3 1 620 0 0 5 620 2 0 2 640 1 2 1 650 0 4 0 660 0 1 4 660 2 1 1 680 1 3 0 690 1 0 4 690 2 2 0 720 3 0 1 710 <td>0</td> <td>1</td> <td>2</td> <td>420</td>	0	1	2	420	
1 1 1 490 0 3 0 500 0 0 4 500 2 0 1 520 1 2 0 530 0 1 3 540 2 1 0 560 1 0 3 570 0 2 2 580 3 0 0 590 1 1 2 610 0 3 1 620 0 0 5 620 2 0 2 640 1 2 1 650 0 4 0 660 0 4 0 660 0 1 4 660 2 1 1 680 1 3 0 690 1 1 0 4 690 3 0 1 710 710 2 2 <td>1</td> <td>0</td> <td>2</td> <td>450</td>	1	0	2	450	
0 3 0 500 0 0 4 500 2 0 1 520 1 2 0 530 0 1 3 540 2 1 0 560 1 0 3 570 0 2 2 580 3 0 0 590 1 1 2 610 0 3 1 620 0 0 5 620 2 0 2 640 1 2 1 650 0 4 0 660 0 4 0 660 0 1 4 660 2 1 1 680 1 3 0 690 1 0 4 690 2 2 720 720 <	0	2	1	460	
0 0 4 500 2 0 1 520 1 2 0 530 0 1 3 540 2 1 0 560 1 0 3 570 0 2 2 580 3 0 0 590 1 1 2 610 0 3 1 620 0 0 5 620 2 0 2 640 1 2 1 650 0 4 0 660 0 1 4 660 2 1 1 680 1 3 0 690 1 0 4 690 3 0 1 710 2 2 0 720 1 1 3 730 <tr< td=""><td>1</td><td>1</td><td>1</td><td>490</td></tr<>	1	1	1	490	
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1 2 0 530 0 1 3 540 2 1 0 560 1 0 3 570 0 2 2 580 3 0 0 590 1 1 2 610 0 3 1 620 0 0 5 620 2 0 2 640 1 2 1 650 0 4 0 660 0 1 4 660 2 1 1 680 1 3 0 690 1 0 4 690 0 2 3 700 3 0 1 710 2 2 0 720 1 1 3 730 0 3 2 740 0 3 760 1 2 2 770	0	0	4	500	
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1 2 2 770 4 0 0 780		0			
4 0 0 780	1	2	2		
0 1 5 780					
2 1 2 800					
1 3 1 810					

C+180	C+150	C+110	Distance between walls (cm)
1	0	5	810
0	5	0	820
0	2	4	820
3	0	2	830
2	2	1	840
1	4	0	850
1	1	4	850
0	3	3	860
0	0	7	860
3	1	1	870
2	3	0	880
2	0	4	880
1	2	3	890
4	0	1	900
0	4	2	900
0	1	6	900
3	2	0	910
2	1	3	920
1	3	2	930
1	0	6	930
4	1	0	940
0	5	1	940
0	2	5	940
3	0	3	950
2	2	2	960
5	0	0	970
1	4	1	970
1	1	5	970
0	6	0	980
0	3	4	980
0	0	8	980
3	1	2	990
2	3	1	1,000
2	0	5	1,000



TopDalle formwork is particularly suitable for residential construction projects. The safety conditions for workers are optimal thanks to the controlled spacing between frames of 13 cm. The flexible use and simplicity of the system offer high productivity.

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