formwork systems

high quality & cost-saving solutions

general brochure

formworks are delivered in packages
with all necessary equipments and assembling instruction

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formwork systems (index)



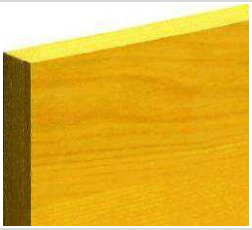



Our formworks have been designed on 3-ply shuttering panels (thick 27mm) and on H20 beams. The choice of the above spruce components is due to its handling qualities and to its resistance to stress and strain.

3-ply shuttering panels and on H20 beams, combined with our steel systems, can be used in many different ways. So it can satisfy, economically and effectively, all the formworks needs in a construction site.

According use, formworks have been designed following the DIN rules 18202 – 18218, on base of concrete weight of 24 kN/m^3 and fresh concrete pressure from 40 kN/m^2 up to 60 kN/m^2

components – safety – accessories *(index)*

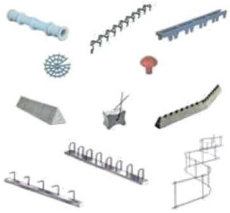


3-ply shuttering panels
standard & specials
see page 24

wood beams H20
multiply formwork sheets
see page 25

props - load bearing towers
accessories
see page 26-27

safety
construction site accessories
see page 28



pouring accessories
see page 29

formwork accessories
see page 30-31-32-

release agents
sprayers
see page 34

wood cleaner machines
see page 35

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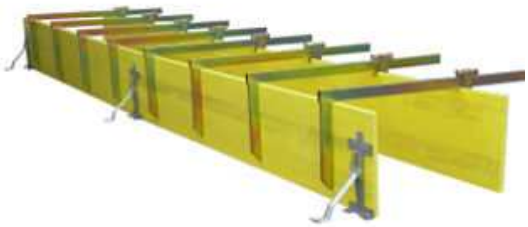
wall foundations formwork

Easy to use. Place the shuttering brackets on the ground; fix it with a steel rod or with nails.
The distance between shuttering brackets can be equal to the length of the 3-ply shuttering panel: a bracket keeps a couple of panels. If need, use a timber to enlarge the bracket base. Plumbing the brackets.

Fix the 3-ply panels to the brackets using nails on its suitable holes. Place foundation clamps with distance not to exceed 100 cm.
The foundation clamps are adjustable to any width. Lock the foundation clamp with a hammer blow to the wedge.



composition of:
wall foundation formwork *code BSTR120 (<cm.120) - BSTR150 (<cm.150)*
length 10 meters, height 50 cm, width 120 - 150 cm, two faces

n. 4 Shuttering brackets cm.50
code 6041

m² 10 3-ply panels
code 01O

n. 10 Foundation adjustable brackets
code 5530
(width <120 cm)
code 5531
(width <150 cm)

circular slab foundation formwork

Assemble the circular formwork elements of 3,00 meters length and 1,50 height as described in page 17 "circular formwork".

Give it the proper curvature by screwing the turnbuckles. Pay attention to screw the same number of turns all of it.

Place one after another the formwork circular elements, connecting it with steel pins and turnbuckles.

We suggest preparing a draft of the foundation, using wood stakes to hammer it on the ground.

Rest the rear base of the formwork elements at the stakes of wood.

The circle made with formwork will be closed with a special element assembled with suitable length.

composition of:
circular slab foundation *code BCRC150*
length 3 meters, height 150 cm, one face

m² 4,50 Multiply 12 mm thick
code 797102

n.6 Short Omega
code 7902

n.12 Turn connectors
code 79652

n.12 Turnbuckles
code 7965

n.36 Steel pins
code 7946
n.12 spring cotter

polygonal slab foundation formwork high < cm 50

Place the shuttering brackets cm.50 to the ground. Fix it with a steel rod or with nails.
Max distance between brackets not to exceed 100 cm.

If need use a timber to enlarge the brackets bases.
Plumbing the brackets.

Fix the 3-ply panels to the brackets with nails in its suitable holes. Assemble the corner as shown in the picture, using nails and wood beams.

composition of:
polygonal slab foundation high < cm 50 *code BFPL050*
length 10 meters, height 50 cm, 1 face

m² 5 3-ply panels
code 01O

n. 10 Shuttering brackets cm.50
code 6041

polygonal slab foundation formwork high < cm 120

Place the shuttering brackets cm.100 to the ground. Fix it with a steel rod or with nails. Max distance between brackets not to exceed 75 cm.

If need, use a timber to enlarge the brackets bases.
Plumbing the brackets.

Fix the 3-ply panels to the brackets with nails in its holes.

Assemble the corners as shown in the picture, using nails and wood beams.

composition of:
polygonal slab foundation high < cm 120 code BFPL100100
length 10 meters, height 120 cm, 1 face

m² 10 3-ply panel
code 01O

m² 2 Special panel
m. 3,00x0,20
code 0XX020

n. 14 Shuttering bracket cm.100
code 6044

square column formwork

cm 15x15- 45x45

cm 50x50 - 95x95

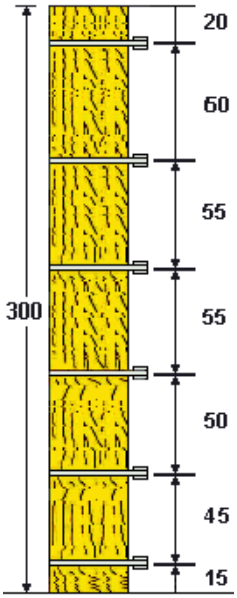
sides cm15-45 x 50-95

Column's formwork system, light, easy and quick to use, that allows an easy column making.

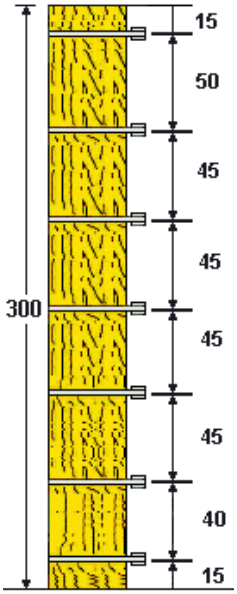
Depending on the height of the concrete pouring, put the brackets around the column with the appropriate distance.

The picture on the side gives the distance (cm) for a column of 3.00 meters height.

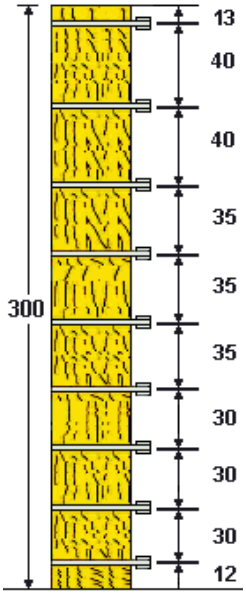
Put in vertical using props engaged with upper column brackets.



6 rings - Filling i3 phases or 2 phases if the speed of filling is <1.50 meters/hour
Load 40 kN/m^2



7 rings -Filling 2 phases or 1 phase if the speed filling is <2,30 meters / hour
Load 60 kN/m^2



9 rings - Filling in 1 phase if the speed filling is <3,00 meters / hour
Load 80 kN/m^2

fix only the first and the last rings of brackets to the wood panels with screws

assemble the rings of brackets fixing each other with wedges

the column brackets are adjustable every 5 cm

composition of:
square column formwork height 300 cm

both sides from cm 15 up to 45 cm (every 5 cm) *code BCOL1545*

n.24 Column brackets cm.15-45
code 5540

m² 6 3-ply panel
cm.50x300
code 01O300

n.24 Large wedges
code 5211

both sides from cm 50 up to 95 cm (every 5 cm) *code BCOL5095*

n.24 Column brackets cm.50-95
code 5541

m² 12 Special panel
m.3,00x1,00
code 0XX100

n.24 Large wedges

code 5211

one side from cm 15 up to 50 cm + one side from cm 50 up to 95 cm (every 5 cm)
code BCOL1595

n.12
Column brackets 15-45/50-60
code 5542
n.12 Column brackets cm.50-95
code 5541

m² 3 3-ply panel
cm.50x300
code 01O300

n.24 Large wedges
code 5211

m² 6 Special panel
m. 3,00x1,00
code 0XX100

circular column formwork

The circular column formworks are made in disposable cardboard.
Strut and plumb using props engaged with a special collar (picture 1)
Stripping with special steel wire arranged on the inside (picture 2)

pic.1 pic.2 pic.3 pic.4

Size available:
- Diameters from cm.15 up to 120 cm, every 5 cm
- Light weight: heights up to 4 meters code L
- Strong: heights up to 12 meters code H
- Smooth finish (coated inside pic.3) code V
- Standard finish (spiral inside pic.4) code S

wall formwork
with strip-spacers

In every construction site there are many little walls to be build.

Formwork with strip-spacers is the highly economical way with cost saving solutions, to do it.

Quick and easy to use:

- Start placing on the ground the starting boards. (Starting boards could be made by cutting wooden panels in pieces of 12,5 cm width)
- Place the strip-spacers, fix it with nails in suitable holes. The strip-spacers-span depends from the height of pouring (see chart on next page)
- Place the first row of shuttering panels and the second row of the strip-spacers. In case of need for length adjustment, it is better to use the adjustable steel sheet (straight or angled) instead than cutting the wooden panels
- Place shuttering-panels-rows and strip-spacers-rows up to the desired height. In the last row, fasteners elements and strip spacers are locked with wedges
- To plumb the formwork you can use timber or our shuttering bracket

composition of: ***wall formwork*** *code BMUR100* - surface 100 m^2 (2 faces 50+50 m^2)

n. 200 Strip-spacers
code 560
(disposable each pour)

n. 400 U profile with hook cm 50
code 5121

n. 100 Large wedge
code 5211

Adjustable steel sheet
straight or angled
on need - code 5520 -5521

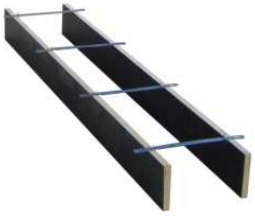
Steel fasteners for corner
on need
code 572

m² 100 3-ply panel
code 01O

Every pouring has specific characteristics to be assessed properly. We recommend extreme caution and the following basic rules for safety:

- Before the pour, pay attention to the correct connection between spacers, fastener and wedges.
- Place first strip-spacer at 5 cm from the edge of every shuttering panel.
- Place the others strip-spacers between the two strip-spacers already placed at the panel edges. The span must not exceed the maximum shown on the side chart.
- The pouring must be slow, especially on the base of formworks.

using system with multiply sheets



The items of this formwork system allows the use of wooden sheets with different thickness.

Strip-spacers are available for wooden sheets with thickness of 18-21-27 mm.

On base of the wooden sheets used, span must not exceed the permitted (see chart on side).

The strip-spacers formwork has been designed for a fresh concrete pressure of 40 kN/m^2, according with rules DIN 18218.

	wooden sheets			
pour height cm	multiply 18 mm	multiply 21 mm	3-ply 27mm	spacers permitted span (cm)
50	66	75	100	
100	50	55	75	
150	44	49	63	
200	39	44	56	
250	35	40	50	
300	32	37	46	
350	30	34	43	
400	28	32	40	

KIT modular formwork

The main feature of our system is its simplicity and the modular elements.

KIT system is unique, has not imitations: it is a patented system.

It is very fast to assemble in any desired size, even large formworks elements, just by working on the ground using a few small modular steel fasteners (interlocking one with another).

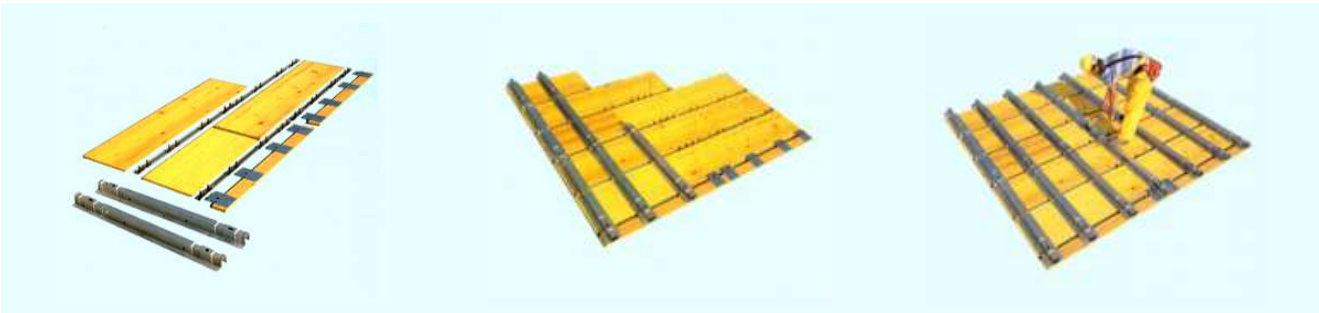
The steel items are assembled with 3-ply shuttering panels 27 mm thick.

The formwork elements starts from a size of 138x100 cm up to 624 x 600 cm. (height x length).

The formwork elements assembling is very easy and simple: you need just a hammer!

assembling

Working on the ground, put together U profiles, Omega and 3-ply shuttering panels. In a few minutes, large formwork elements are assembled.



After assembing, the formwork elements can be erected by crane or by other lifting device.

Also, the whole formwork elements can be moved to another construction site or stored stacked.

logistic

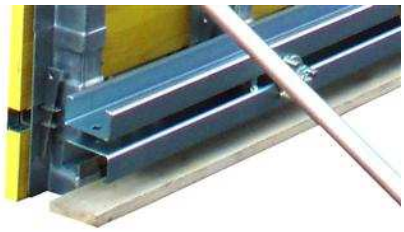
The formwork elements, up to 2.00 meters length, can be loaded on a truck to be moved from a construction site to another or to the store.
Otherwise the elements can be disassembled.
In this case it takes very little space. It is a good solution for storage or for a long distance transport.


fair faced

KIT formwork elements are a very strong structure, easy to be covered with a thin multiply sheet (6–9-12mm of thick).
So, you can get a fair-faced concrete and also save money.
After many concrete pouring you can get a new formwork only replacing the thin multiply sheet with a very little cost.
The 3-ply shuttering panels will not have any worn out, because it never touched the concrete.


erecting - joining

To get ease of erection it is better prepare a foundation perfectly flat.
After erecting the formwork elements, plumb it by screwing the adjustable strut.
To facilitate aligning of the formwork element, fasten a timber on the ground and rest there the rear part of the formwork elements.

Once the first formwork element is plumbed, add another one connecting it with a waler coupler.
Proceed in the same way until the end of the wall.


The lengths of the formwork elements are multiples of 50 cm, so it could be necessary to adjust lengths using the adjustable waler coupler.
The gaps between the formwork elements can be filled with 3-ply shuttering panels and timber.


corners

The inside corner is formed with two formwork elements placed at 90 degrees angles and connected, with an inside corner coupler, using steel pins. By changing the place of the steel pins, it is possible to get wall thickness from 15 up to 40 cm.

The outside corner is formed with two formwork elements placed at 270 degrees angles and connected, one with other, with an outside corner couplers, using a tie rod fixed with butterfly nuts.

Inside corner and outside corner fit the thickness of the wall using fitting adjustable steel sheet.

composition of:

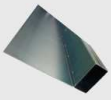
KIT modular formwork *code BKIT1502* 150 m^2 (2 faces 75+75 m^2) with 2 complete corner.

Formwork elements A300
n.2 m. 1,00x3,00
n.6 m. 1,50x3,00
n.18 m. 2,00x3,00

n.6 Inside corner couplers
code A000330
n.6 Outside corner couplers
code A00040

n. 54 Normal couplers
code A00021

n. 6 Adjustable couplers
code A00022



n. 8 adjustable steel sheets
code A00050

n. 66 Tie rods
code 79418

n. 132 Butterfly nuts
code 79431

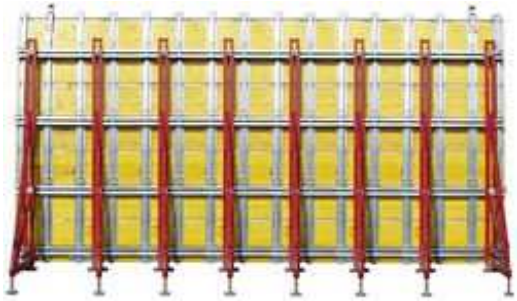
as needed:

Lift hook
code 799952
minimum 2

Formwork struts
code 79994

Walkway bracket
code 799951

single-sided formwork

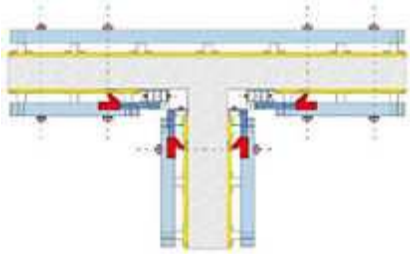


The formworks elements of KIT system can be used as single-side formwork.
Formwork elements are connected with suitable bolts supporting strut frame (code799949)
The supporting strut frame should be placed one after another. The span must not exceed 100 cm.
The supporting strut frame must be anchored to the foundation with a tie rod anchor (that must be embedded inside the foundation slab during the pouring) or with plugs after placed.
Pouring rate must not exceed 2.50 meter/hour of vertical filling.

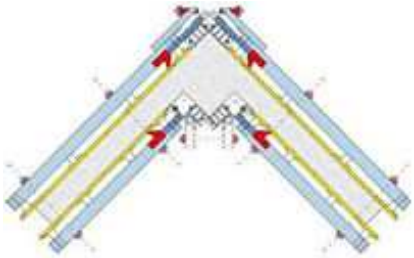
special cases

KIT formworks system is flexible adaptable and adjustable. KIT can solve many pouring special cases
The following are some examples:

column inside wall



T corner



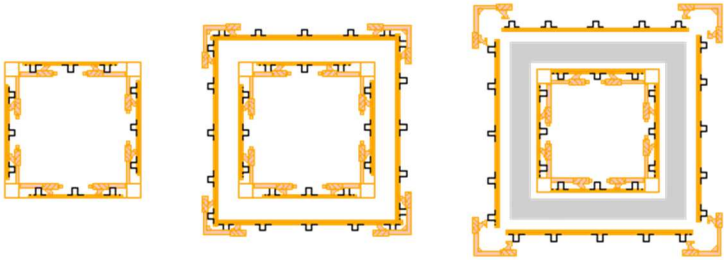
column inside the corner

!! free technical advice to customers !!

In case of special formwork, send drawings to:
infoline@legnotre.com
We will help you to find the best solutions!

lift shafts formwork

The lift shafts formwork is formed with four formworks elements and a inner form.
Each of the 5 pieces is erect by crane.
First place the inner form and after fit the steel bars for concrete reinforcing.
Fix the 4 formwork elements outside.
Fix all the formwork elements with tie rods and butterfly nut.
Pouring rate must not exceed 2.50 meter/hour of vertical filling.
To strip, pull out the tie rods and remove the 4 outer formwork elements.
Then, screw the suitable bolts to narrow the inner form's elements, so it can be extracted by crane.
The whole inner form and the four formworks elements shall be repositioned on the upper floor.

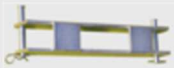


composition of:
stair & lift shafts formwork *code BKITLIFT*

n. 8 KIT formwork elements
code 8285

n. 4 Inside corner code
8285330

n. 4 Outside corner code
828540



Lift hook
code 799952
as needed - 2 minimum

Fitting steel tubes
code 8285340
as needed

Formwork struts
code 79994
as needed

Walkway brackets
code 799951
as needed

Butterfly nuts code 7943
Tie rods - code 7941
as needed

circular walls formworks

composition of:
circular walls formworks
code BKITCIRC

Circular formwork elements
m 3,00 x 3,00
code 83007
as needed

Lifting hook
code 799952
as needed minimum 2

Butterfly nuts code 7943
Tie rods code 7941
as needed

Formwork struts
code 79994
as needed

Walkway brackets
code 799951
as needed

Circular formwork needs multi-ply sheets suitable for curving.

Place the multi-ply sheets on a surface made with timber and trestles.

With an electric screwdriver and screw for wood, fix the Omegas to the multi-ply sheet using bolt and lock nut.

Then fix the turnbuckle connector to the Omega with steel pin and spring cotter.

Fix the turnbuckles between two turnbuckle connectors.

Then give it the proper curvature by screwing the turnbuckles.

Pay attention to screw in the same number of turns all the turnbuckles.

In this way it is possible to get a circular formwork element that can be moved and erect by crane or by hand.

Place one after another the formwork circular elements, connecting it with steel pins and turnbuckles.

The circular formwork will be closed with a special element assembled with suitable length.

When the inside part is finish, fit the steel bars for reinforcing concrete.

Erect the outside part in the same way of the inside.

Fix all elements with tie rod and butterfly nuts.

Capacity load is of 40 kN/m^2.

To stripping the formwork and to be reassembled again just divide the formwork in single pieces and remove it one after another.

H20 wooden beam slab floor formworks

the beams

The H20 beam floor formwork is the easiest and more effective formwork able to build up a floor.

There are a few number of component systems, all perfectly coordinated.

The beam floor formwork can be easily adapted to any floor forms.

The main requirement is only the respect of the permitted span between props, primary and secondary beams.

See pages 20 - 21 for tables for quick evaluation of the span and knowledge of formwork load.

Assembly is easy: you need a few nails only.

Place the props with tripods arranged according to the permitted span.

Fit primary beams on the cross-prop-head (according permitted span).

Join the primary beams by sharing the same cross-prop-head support.

Fit the secondary beam on the primary (according permitted span).

Join the secondary beams by sharing the support over the primary beams.

the sheets

To choose the suitable wooden sheet see page 24.

The sheeting is to be nailed directly onto the upper chord.

Wooden formwork beams are only to be used in an upright position. In addition, they are to be secured against tipping according to static requirements.

To shut the pouring, use the shuttering bracket and 3-ply panel in vertical position.

early striking

The lowered head, fixed over the props, allow early striking of the formwork.

After a few days (it depends on the concrete properties) you can strike and remove the most part of the formwork.

So it will be ready to be re-used for a new floor/store.

Just leave about 50% of props and 25% of 3-ply shuttering panels.

composition of:
H20 beam floor formworks *code BSOL500*
load 5 kN/m², surface 500 m²

m. 680 H20 Super beam
on needed length
code 614

m² 500 3-ply panels
code 01O

n. 130 Props class D
code 606D
n. 130 Tripod
code 6021
n. 130 Cross prop head
code 6011

Shuttering bracket on needed
code 6041
Lowering head on needed
code 6012

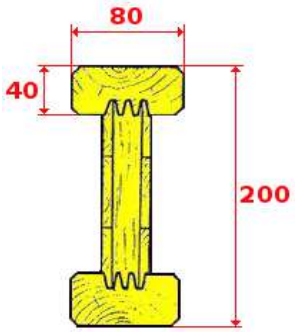
The H20 beams can be used as support of precast beams

floor full concrete

floor with precast beams

wooden H20 beams characteristics

floor formwork structures design



certificated with rules EN13377

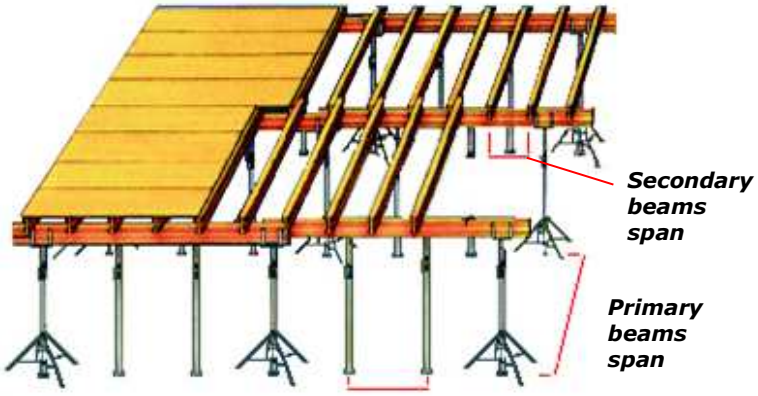
spruce timber H20 beams data	
Elastic module	1.050 kN/cm²
Resistance module	460 cm³
Inertia module	4600 cm⁴
Spruce bending resistance permitted	1,2 kN/cm² (1/5 of break)
Permissible bending moment	5,0 kNm
Shear force	11 kN
Support reaction	22 kN
Weight	5,0 Kg/m

The person in charge of the construction site have to design the formwork structures according to the characteristics of pour and correct use of every single formwork item.

a quick evaluation

Values needed for a correct floor formwork structures design are:

- ***Load on formwork***
- ***Primary beams span***
- ***Secondary beams span***
- ***Props span***



Load on formwork

Chart side shows some examples of load on floor formwork.

In the column of full concrete slab, the load indicated include
formwork weight,
service and accidental load.

In the columns of precast concrete, are indicate the precast own weight plus others loads.

Values indicated are approximate.
Actual values depend on specific characteristic aspects to be assessed with attention.
These charts are referred at:

- Deflection = span/500
- concrete weight = 26 kN/m³
- formwork weight = 0,40 kN/ m²
- service load 1,50 kN/m²
- accidental load = 20% concrete weight up to 5,0 kN/ m²

Props span

slab thick cm	slab: full concrete	slab: precast concretebeams	slab: precast concretesheet	approximate formwork load kN/m²
10	4,40			
14	5,44	2,10+2,32	2,50+2,40	
18	6,48	2,32+2,36	2,75+2,45	
22	7,52	2,60+2,42	3,05+2,51	
26	8,56	2,95+2,49	3,40+2,58	
30	9,66	3,40+2,58	3,80+2,66	
35	11,22		4,05+2,70	
40	12,78		4,30+2,76	
45	14,34			
50	15,90			

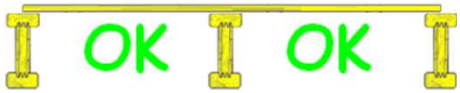
Secondary beams permitted span (wooden sheets choice)

Once you know the formwork load based on available wood sheets. Select the secondary beam span in the chart (or rather the distance of wood sheets rest).

load kN/m²	wooden sheets: multiply thick 18 mm	multiply thick 21 mm	3-ply thick 27mm
4,00	74	85	107
5,00	69	79	100
6,00	64	75	95
7,00	60	71	91
8,00	57	68	87
9,00	54	65	83
10,00	52	62	79
12,00	50	59	75
14,00	48	56	71
16,00	46	53	67

secondary beams permitted span (cm)

Each wood sheet must be rest on 3 point If it rests only in two, span must be reduced of 50%

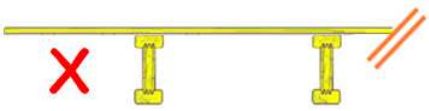


Primary beams permitted span

Once you choose the secondary beams span, knowing formwork load, compare these data in order to obtain the primary beams span (or rather the distance on which secondary beams rest).

load kN/m²	secondary beams permitted span (cm): 50	62,5	75	87,5	100
4,00		343	322	308	297
5,00	343	318	300	287	277
6,00	318	292	278	266	
7,00	293	272	256	245	
8,00	276	257	242	228	
9,00	263	244	231		
10,00	253	235	222		
12,00	240	223	208		
14,00	228	209			
16,00	218	200			

primary beams permitted span (cm)



cantilever (of wood panels or beams) **must not exceed 25% of respective permitted span**

Props class "D" permitted span

Using props class D (load bearing 20 Kn) once you know primary beams span and the formwork load, compare these data in order to obtain the props span (or rather the distance on which primary beams rest).

using props with less load capacity than 20 kN, permitted span must be reduced in a proportional way

load kN/m²	primary beams permitted span (cm): 200	225	250	275	300	325	350
4,00	225	211	198	180	164	150	140
5,00	196	175	158	142	130	120	110
6,00	164	145	133	119	109	100	
7,00	140	125	114	102	93		
8,00	122	110	98	89			
9,00	109	97	87				
10,00	98	87	78				
12,00	82	72					
14,00	70	62					
16,00	65	58					

props - Class D (20 KN) permitted span (cm)

drop beam formwork

To use drop beam formwork it is very easy.

Put one 3-ply panel over another one. The top panel must have a width equal to the beam measure. The bottom panel must be 5 cm. wider. (3-ply special panels are available every 5 cm widths).

Fix with bolts and lock nut the clamp bases to the 3-ply panels as shown in the side picture, with the correct span (see table)

Place the formwork base over the props, pre-placed with appropriate span (see table)

Assemble 3-ply panels on each side to form the beam at the desired width and height.

Slide the arms of the clamp on the clamp base and lock it with a hammer blow to the wedge.

composition of:
drop beam formwork *code BTRIB* length 3,00 m

m² 4,50 Special panel
code 0XX

n. 4 Props class S
code 605S

n. 4 Inernal drop beam clamps
code 5533

n. 2 Tripod
code 6021

height beam cm	props and clamps span cm	prop load every 10 cm beam width (kN)
30	**100**	**1,17**
40	**91**	**1,37**
50	**85**	**1,55**
60	**80**	**1,71**
70	**76**	**1,81**

drop beam chart

beam width permitted cm.45
beam height permitted cm.70
(height means with slab thick)

edge drop beam formwork

Prepare the load-bearing towers at the building edge at distance of 3m to each other. Adjust the towers up to the height.

Place primary and secondary beams over the load-bearing tower with the appropriate span (see chart).

Anchor the towers to the ground slab with tie-back and the beams on the tower with textile slinging. Place the appropriate safety devices, as walkway with fall arrest system.

Prepare the formwork base with two 3-ply panels, as described in the drop beam.

Place the formwork base over the secondary beams. Assemble the 3-ply panels sides to form the beam at desired width and height.

Fix it all with multifunction beam brackets.

composition of:
edge drop beam formwork *code BTRIBP*
4,80 m length

n. 3 H20 beams length 490 cm
code 614490
n. 6 H20 beams length 290 cm
code 614290

m² 8 Special panel
code 0XX

n.1 Load-bearing tower
code 607

n. 2 Props class D
extension on needed
code 606D
n. 2 Tripod
code 6021
n.6 Cross prop head
code 6011

n. 12 Beams forming supports
code 60430

n. 6 Hand-rail bracket
code 6032
n. 3 Safety textile slinging
code 5930

height beam cm	secondary beams and clamps span cm	load/meter of length/10 cm of beam width (kN)
30	100	1,28
40	91	1,60
50	85	1,92
60	80	2,24
70	76	2,56

edge drop beam chart

beam width permitted cm.45
beam height permitted cm.70
(height means with slab thick)

3-ply shuttering panels

The 3-ply shuttering panels are used in construction to make formwork, walkways, fences and other uses.

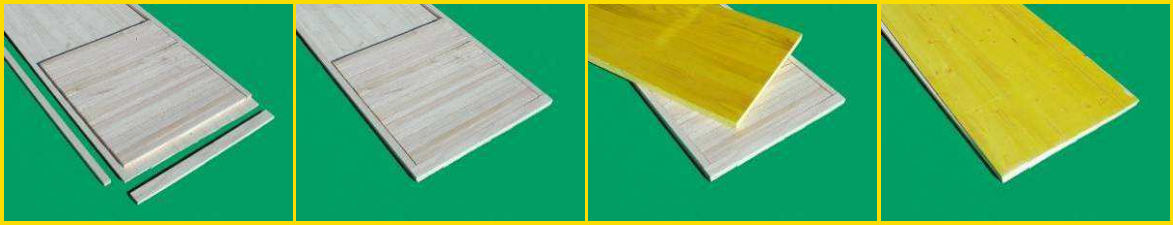
The advantages are the low weight, the long life, the easy use and a variety of uses.

The thickness of 27 mm allows a high capacity to withstand the stresses of bending, which makes it suitable to withstand considerable loads.

The surfaces are impregnated with a resin that protects from moisture infiltration avoiding deformation, swelling and twisting.

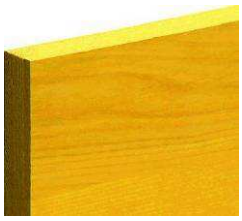
The industrial heat treatment (> 100 ° C) ensure the absence of harmful insects from wood.

built on 3 ply with crossed boards



3-ply panel with frame
- thickness mm. 27
- width cm. 50
- lengths cm 100/150/200/250/300
- weight 12,50 Kg/m^2
- package 40 pieces

- European spruce wood
- adequate drying
- glued with melamine resin moisture resistant (AW100)
- surface coated with melamine resin
- built with protection frame
- greater number of uses



3-ply panel without frame
- thickness mm. 27
- width cm 50
- lengths cm 100/150/200/250/300
- weight 12,50 Kg/m^2
- package 40 pieces

- European spruce wood
- adequate drying
- glued with melamine resin moisture resistant (AW100)
- surface coated with melamine resin
- without protection frame
- suitable to be cut

3-ply panel special sizes
- thickness mm. 27
- width cm 15 - 100
- lengths cm 300 – 500
- weight 12,50 Kg/m^2
- package 40 pieces

- European spruce wood
- adequate drying
- glued with melamine resin moisture resistant (AW100)
- surface coated with melamine resin
- built without protection frame
- suitable to be cut

timber H20 beams

The timber H20 beams are used in construction in many way.

The advantages are the low weight, the long life, the easy use and a variety of uses.

The surfaces are impregnated with a binder resin that protects from moisture infiltration avoiding deformation, swelling and twisting.

The industrial heat treatment (> 100 ° C) ensure the absence of harmful insects from wood.

For use in building sector as formwork components, Legnotre H20 beams are certified according to EN13377.

H20 wood beams with head plastic cup protection

- lengths standard m 2,90-3,90-4,90-5,90 available up to 8,90 m
- weight 5,00 Kg/m
- packs 50 pieces

- european spruce wood
- armour of beam heads with plastic cup
- adequate drying
- glued with melamine resin moisture resistant (AW100)

H20 wood beams without head protection

- lengths standard m 2,90-3,90-4,90-5,90 available up to 11,90 m
- weight 5,00 Kg/m
- packs 50 pieces

- european spruce wood
- adequate drying
- glued with melamine resin moisture resistant (AW100)

How to protect wooden beams and panels:

- ***dismantling as soon as possible***
- ***clean immediately after use***
- ***cover when exposed to the sun***
- ***weather protection***
- ***storing with release agent applied***
- ***use a good release agent***

other wood elements

plywood multiply sheet code 7971

- thickness mm. 5 - 6 - 12 - 15 - 18 - 21
- size:
  - cm. 122x244
  - cm. 125x250
  - cm. 150x300

- european birch wood
- adequate drying
- phenol glued Class 3 (EN314.2)
- surface coated with phenol film
- edge safe with paint

OSB 3 panels code 798

- thickness mm 9 – 12 – 15 – 18
- size 125x250 cm
- weight 600/650 kg/m^3

- european spruce wood
- fibres approx. 150x0.4 mm

props

Legnotre offers a wide range of props at the best quality/price ratio.

All props are made of high quality steel, with continued strict control of manufacturing processes.

The props are equipped with certified load capacity, permanent prevention against unintentional disengagement, hand traps protection, self-cleaning adjustment, blocking system of the inner tube.

The ring and the threads are zinc coated.

Available in various models, painted or galvanized.

Economy code 605S | High quality code 605A | Class B code 606B | Class C – D code 606D | Class E code 606E

The floor formwork beam H20 is provided for the use of props class D, certified according to DIN EN 1065 with a load capacity of 20 kN to any extension.

In the other cases can be use props with minor load capacity.

The cases of use are many and load capacity requirements are different, the table below can help you in the choice of suitable props.

EXTENSION cm	ITALIAN PROPS								EN1065 PROPS									
	economy		high quality						CLASS B				CLASS C – D available class E load capacity to any extension 30 Kn					
	I36	I40	S29	S32	S36	S40	S45	S50	B30	B35	B40	B45	D30	D35	D40	D45	D50	D55
160			17,5															
180			17,3	17,5					30,0				35,0					
200	17,0		15,8	17,4	17,5				30,0	30,0			35,0	35,0				
220	15,3	16,3	14,0	17,0	17,3	17,5			24,8	28,9			35,0	35,0				
240	13,7	14,4	13,2	16,3	17,2	17,4			20,8	24,3	27,8		31,3	35,0	35,0			
250	13.0	13.5	11,7	15,1	16,1	17,3	17,5		19,2	22,4	25,6	28,8	28,8	33,6	35,0	35,0		
260	12,3	12,6	10,6	13,2	14,8	16,0	17,4		17,8	20,7	23,7	26,6	26,6	31,1	35,0	35,0		
280	11,0	11,1	10,3	12,5	14,1	15,4	16,0	16,0	15,3	17,9	20,4	23,0	23,0	26,8	30,6	34,4	35,0	
290	10,4	10,4	9,9	11,7	13,6	14,9	15,2	16,0	14,3	16,7	19,0	21,4	21,4	25,0	28,5	32,1	35,0	
300	9,9	9,7		9,2	11,9	13,4	14,1	15,4	13,3	15,6	17,8	20,0	20,0	23,3	26,7	30,0	33,3	35,0
320	8,9	8,4		8,5	10,6	12,9	13,6	15,0		13,7	15,6	17,6		20,5	23,4	26,4	29,3	32,2
340	8,2	7,3			9,9	11,4	12,7	14,2		12,1	13,8	15,6		20,0	20,8	23,4	26,0	28,6
350	8.0	6.8			9,2	10,7	12,3	13,6		11,4	13,1	14,7		20,0	20,0	22,0	24,5	26,9
360	7.7	6,3			7,8	10,0	12,0	13,0			12,4	13,9			20,0	20,8	23,2	25,5
380		5,6				8,7	10,0	12,0			11,1	12,5			20,0	20,0	20,8	22,9
400		4,9				7,5	9,3	10,7			10,0	11,3			20,0	20,0	20,0	20,6
420							8,6	10,0				10,2				20,0	20,0	20,0
440							7,5	8,0				9,3				20,0	20,0	20,0
450							6,5	6,9				8,9				20,0	20,0	20,0
460								6,2									20,0	20,0
480								4,9									20,0	20,0
500								4,0									20,0	20,0
550																		20,0

load-bearing tower code 607

It's a modular system, flexible and economical, suitable for high loads and great heights.
It is built with steel quality modular elements, certified according to EN 10219-1/2.
Galvanized with minimum zinc thickness 50 um, in accordance with EN 40.

- Max load 40 kN
- Depth: 1200 mm
- Width: 1600 mm
- Adjustable base 60 cm
- Frame height 150 cm
- Half frame Height 95 cm
- Terminal part adjustable up to 75 cm

				load capacity Kn			
	Type	minimum extension cm	maximum extension cm	with free top kN	with bracing and free top kN	with bracing + top block system kN	horizontal blocking force kN
single tower	A1	173	288	40,0			6,0
	A2	224	348	40,0			6,0
	A3	265	381	40,0			6,0
	A4	269	441	40,0			6,0
	A5	323	438	40,0			6,0
	A6	327	498	40,0			6,0
partial bracing	B7	415	531		40,0	40,0	6,0
	B8	419	591		40,0	40,0	6,0
	B9	473	588		40,0	40,0	6,0
	B10	477	648		40,0	40,0	6,0
	B11	565	681		40,0	40,0	6,0
total bracing	C12	569	741		40,0	40,0	5,0
	C13	623	738		30,0	35,0	5,0
	C14	627	798		30,0	35,0	5,0
	C15	715	831		30,0	35,0	5,0
	C16	719	891		25,0	30,0	5,0
	C17	773	888		25,0	30,0	5,0
	C18	777	948		20,0	25,0	5,0

props, drop beams & slab formworks accessories

Cross prop head
code 6011

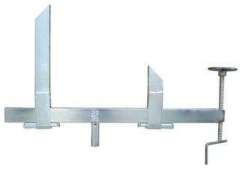
Supporting prop head
code 6013

Prop tripod
code 6021

Lowering prop head
code 6012

Internal drop beam clamp
code 5533

External drop beam clamp
code 5534



Small H20 beam support
code 60431

Beam forming support
code 6043
Extention
code 60430

Beam forming support
code 6043

tower & shoring accessories

Right-angle coupler
code 609101

Right-angle coupler 4 bolts
code 609102

Swivel coupler
code 609103

Round base
code 6081

Base jack
code 6082
Head jack
code 6083

Steel pipes
code 6102

Hook wall tie
code 610101

Coupling
code 610102

Pin
code 610103

safety systems

Clamps for safety handrail, for slab floor, ladders, terraces
code 6031

Clamps for safety handrail, for H20 beam head
code 6032

Bracket for safety walkway, for external wall
code 6033

construction site accessories

Winch textile slinging
code 5930 – 4,65 m

Stacking pallet code 5941
142x90x102 cm

Safety barriers code 5942
100 – 200 – 250 cm

Conveyors for dumping rubble
cod. 55583
ext Ø 59 cm -int Ø 38-50 cm
height 106 cm weight 8,00 kg

Hopper cod. 55582
Mouth of load 64x42 cm
Mouth of unloading Ø 39 cm
size: 106x98x74 cm

Frame for hopper
cod. 55581

Global Savska c. 12a 1000 Ljubljana Slovenja
Phone +386 41 742 769 - info@3m-global.eu

concrete pouring accessories

Tubox spacer
code 650
on request internal watertight plug
Sizes available from 15 to 50 cm every 5 cm

Safety cap for steel bar
code 654
Ø 6/18 e
Ø 16/30

Triangular shaped profiles without & with winglet
code 6620/6621
length 200 cm
heights 20/25/30 mm

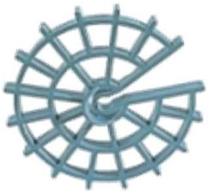
Tube, cone & plug Ø 22
code 6611 – 6612 - 6613

"S" & "DN" spacers
code 660
horizontal and vertical use at wire crossing mesh point
height 10-50 mm every 5

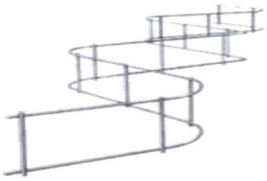
"ZP" spacer
code 651
horizontal use
ensures the optimal flow of the concrete
length 120 cm
height 15–60 mm every 5

"U" spacer
code 652
able support heavy loads
length 200 cm
height 15–60 mm every 5

"O" spacer
code 653
horizontal and vertical use
Ø 4/8 – 20 mm
Ø 6/10 – 25/30 mm



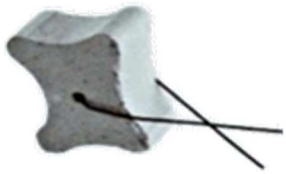
"ZF" spacer
code 655
steel welded spacer
ideal for heavy reinforcing
length 200 cm
available heights
30/40/50/60/70/90 mm



Fibre-reinforced concrete
perfect adherence to the concrete
length 100 cm
heights mm
CZ – CT 30-40-50
CF 20-25-30 | 35-40-50

"CT" spacer
code 656

"CZ" spacer
code 657



"CF" spacer
code 658

Rebar connection boxes
single or double stirrup
quick, safe connections between subsequent pour
with lid cardboard plasticized polystyrene caps at the heads

double rebar connection boxes
box length 1250 mm
box width from 85 to 225 mm
bar Ø 8–10–12 mm
bar length 320-390-460 mm
spacing stirrups 100–150–200–250 mm

double code 6591

simple rebar connection boxes
box length 1250 mm
box width from 50 to 75 mm
bar Ø 8–10–12 mm
bar length 320-390-460 mm
spacing stirrups 100–150–200–250 mm

single code 6592

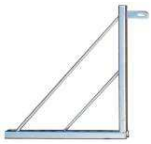
formwork accessories

Column push & pull
code 55403

Column bracket

code 5540
cm 15-45
every 5 cm

code 5542
cm 0 - 45
every 5 cm
rectangular



code 5541
cm 50-95
every 5 cm

Adjustable foundation clamp
length: 120 cm code 5530
150 cm code 5531

Spring rapid clamp code 55561
steel base 75 x 110 mm
steel rod ø 6 a ø 10 mm

Tensioner code 55562

Wedge rapid clamp code 55563
steel base 40 x 100 mm
steel rod ø 6 a ø 10 mm

Tensioner code 55564

Multi-holes steel profiles
code 503
width 60 mm code 5031
width 80 mm code 5032
lengths 120 – 160 cm

Shuttering bracket
use to shut concrete pouring

50 cm code 6041

100 cm code 6044

Adjustable step form
code 5555
height 16 - 18 - 20 cm
adjustable width 85 - 160 cm

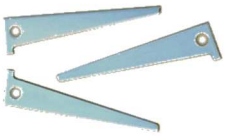
Circular wall plate
code 5557
to use with steel strip-spacers
and wedge connexion with
steel rod from ø 12 to ø 16 mm

Column plate
code 55430
length cm 65-75-85-
110-135-155-200

Wedge
code 5543

"U" steel profiles
code 502
lengths:
63-113–163 cm
50-100–150 cm

Large wedge
code 5211



"U" profiles with hook
code 512-514
lengths
50 - 100 – 150 cm

Spiral plate fastener
code 5310
length 50 cm

Small wedge
code 5411

Adjustable sheet
form 15
up to 45 cm

wall code 5520

corner code 5521

Inside corner hook profile
code 571
Corner strip spacer
code 572
cm.15-40
every 5 cm

Steel strip-spacer
available for shuttering panels with thickness 18 – 21 – 27 mm
code 560

Plug
code
5620

Steel strip-spacer watertight
code 561

Spool steel wire annealed
code 5550

diam.0,9 – 1,0
wire 2 - 3

KIT formwork system components

"U" steel profile
code 7923
lengths
100–150-200 cm

Starting board
code 791
lengths
100–150-200 cm

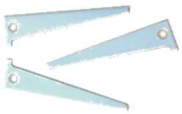
Omega

short 108 cm
code 7901

long 162 cm
code 7902

Alignment waling
code 793
lengths
100–150–200
250-300 cm

Large wedge
code 7948



Omega plastic plug
code 79493

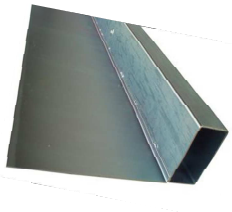
Waling rapid fastening bolt
code 79425

Inside corner coupler
code A000330

Outside corner coupler
code A00040

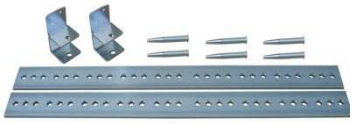
Shut poured coupler
code A00023

Corner adjustable steel sheet
code A00050



Normal coupler
code A00021

Adjustable coupler
code A00022



Lifting hook
code 799952

Steel pin Spring cotter
code 79461-7947

Walkway bracket
code
799951

Formwork push and pull
code 79994

Adjustable base
code 799953

Wing nuts
diam.70 ø 13
code 7943
diam.110 ø 17
code 79431

Threaded tie rod
ø 15-17 code 79418
lengths up to 3,00 m

Nut
code 7944

Bolt
code 7941

Turnbuckle connector
code 79652

Turnbuckle
code 7965

Supporting construction frame
code 799949

Bracket for safety walkway to assemble the climbing
code 6034

release agents

release agent BIO90 (wood) code 5510

- performance 20÷40 m²/l
- plastic canister 25 litres

Release agent BIO90 is a top-quality oil that guarantees easy removal of concrete on wood shuttering panels. Surfaces treated with release agent BIO90 are protected by a resistant film that ensures optimum finishing.
This product has been developed and enhanced to comply with the most recent regulations related to environmental impact - 2003/53/EEC.
This product easily emulsifies in water, 1 to 5 ratios
The product is packed in 25-l plastic drums.
Estimated yield: 25 ÷45 m² per litre of release agent.
It is recommended to:
- pour slowly the product into water, shake mechanically until a stable milk-white emulsion is obtained
- use the recommended quantity
- the emulsified concentrate can be stored for long periods
- it is advisable to store the product in closed rooms
- close the packaging after use
- avoid exposures to temperatures below 5° C

release agent BIO99 (steel-wood) code 5512

- performance 30÷50 m²/l
- plastic canister 25 litres

Release agent BIO099 is ideal for steel-wood formworks.
It contains special additives that protect the steel parts of the formwork by a formation of rust and corrosion due to environmental conditions (fog, salty environment) or their limited use.
Suggested for shuttering panels used for floor slab
(due a long time before stripping)
Must be used in pure form
Due to its low viscosity, may be applied with a brush or sprayer.
Does not contain components "toxic / harmful".
It is recommended:
- it is advisable to store the product in closed rooms
- close the packaging after use
- avoid exposures to temperatures below 5° C
- respect of the rules of use for release agent

sprayer code 5515

The sprayer manual pumps make easy, simple and reliable the application of release agent.

wood cleaner machine
(with release agent shower)

SIMMETRICA code 5910

- Cleans 4 sides, adjustable width from 10 up to 51 cm and adjustable on thickness from 18 up to 120 mm
- Cleans timber, 3-ply shuttering panels thickness 21 and 27 mm and H20 beams
- Speed of 7 mt/minute
- Minimum electric power required (2.0 HP)
- With pump for release agent application
- With lifting eyebolts, removable rudder, 13" wheels and safety guards
- Without advance chains
- Maintenance free

MINISIM code 5920

- Cleans 3-ply shuttering panels 27 mm thickness on the 4 sides
- Speed of 6 m/minute
- Minimum electric power required (1,5 HP)
- With pump for release agent application
- With lifting eyebolts, removable rudder and wheels and safety guard
- Without advancement chains
- Maintenance free

machine and components patented

Motion is obtained by 2 gear motors fixed on dragger rolls.
In this way, the traction chain is eliminated and therefore, maintenance and adjustment are not required.
The removable frames are assembled on threaded supports in ductile cast iron with low friction coefficient.
The machine is made symmetrically, with the lateral cleaning rod always aligned to the table axis, when thickness changes.
The driving rollers, thanks to the rounded slots along the surface, break off concrete residues.
The first pair of scrapers carries out the preliminary cleaning and the second pair finishes the operation.
Scrapers are made in hardened steel with high wear resistance.
Thanks to the vertical position of the wood panel, concrete pieces fall and are collected in a container.
The pump has variable delivery to wash boards and apply release agent by means of jets fitted on rod.
Rubber sheaths allow application of release agent according to the needs.