

formwork systems

high quality & cost-saving solutions

general brochure

column formwork



cm 15x15- 45x45



cm 50x50 - 95x95



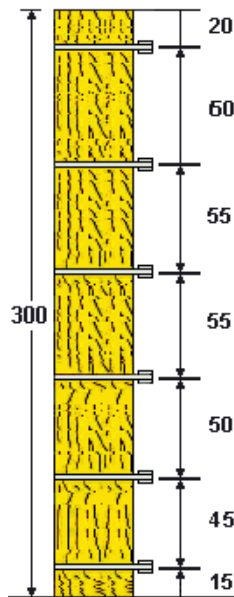
sides cm15-45 x 50-95

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.

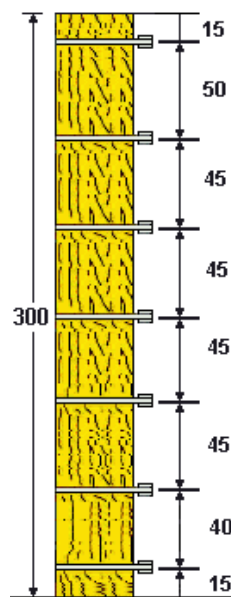
The picture on the side gives the distance (cm) for a column of 3.00 meters height.

Put in vertical using props engaged with upper column brackets.



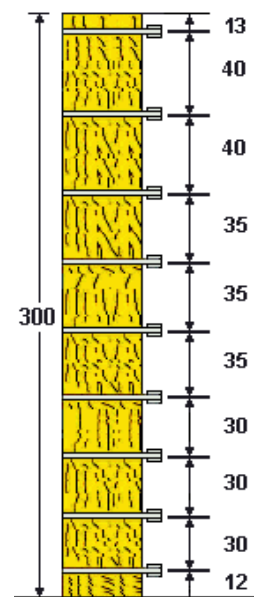
6 rings

Capacity load 40 kN/m²



7 rings

Capacity load 50 kN/m²



9 rings

Capacity load 60 kN/m²



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 010300



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 010300



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 m² (2 faces 50+50 m²)

	n. 250 Strip-spacers code 560 (disposable each pour)		Adjustable steel sheet straight or angled on need - code 5520 -5521
	n. 500 U profile with hook cm 50 code 5121		Steel fasteners for corner on need code 572
	n. 100 Large wedge code 5211		m ² 100 3-ply panel code 010

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 value permitted.
- The pouring must be slow, especially on the base of formworks.

using system with multiply sheets



The formwork with spacers, calculated for a fresh concrete pressure of 40 kN/m² and a filling speed of 1.60 meters/hour, in accordance with the DIN 18218 standards, with a safety factor of 1.7, provides, for the spacers used with a vertical distance of 50 cm, a maximum longitudinal distance of 40 cm.

The table on the right indicates, based on the type of panel and its thickness, the maximum longitudinal distance that can be supported by the panel, for any width of the panel itself.

pour height cm	wooden sheets			permitted span (cm)
	multiply 18 mm	multiply 21 mm	3-ply 27mm	
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	



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 010



n. 130 Props class D
code 606D

n. 130 Cross prop head
code 6011

n. 130 Tripod
code 6021

n. 300 H20 lock clamp
code 6015

The H20 beams can be used as support of precast beams

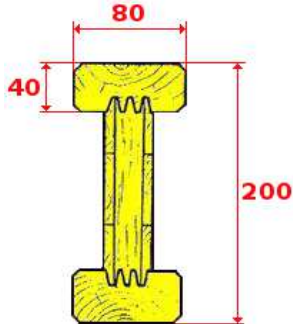


floor full concrete



floor with precast beams

wooden H20 beams characteristics floor formwork structures design



certificated with rules EN13377

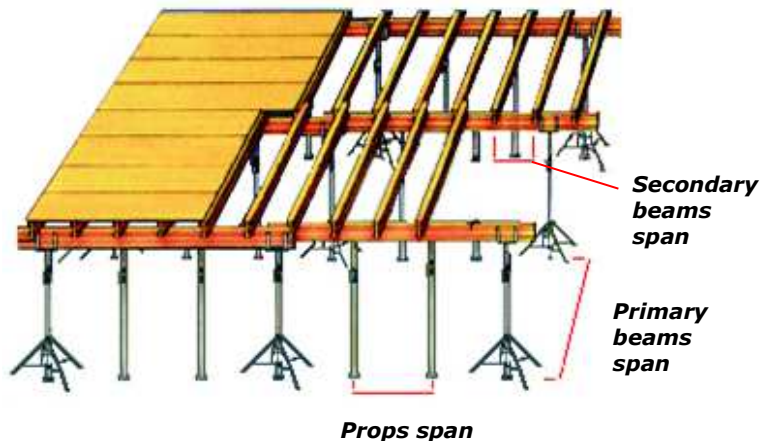
spruce timber H20 beams data	
Elastic module	1.050 kN/cm ²
Resistance module	460 cm ³
Inertia module	4600 cm ⁴
Spruce bending resistance permitted	1,2 kN/cm ² (1/5 of break)
Permissible bending moment	5,0 kNm
Shear force	11 kN
Support reaction	22 kN
Weight	5,0 Kg/m

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 = 1/500 span
- 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

slab thick cm	slab			approximate formwork load kN/m ²
	full concrete	precast concretebeams	precast concretesheet	
10	4,40			approximate formwork load kN/m ²
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			

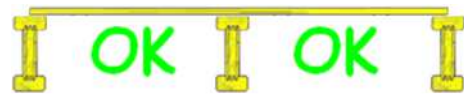
Secondary beams permitted span (wooden sheets choice)

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/m ²	wooden sheets			secondary beams permitted span (cm)
	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	



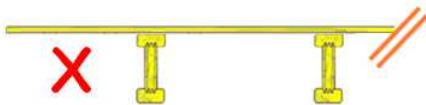
Each wood sheet must be rest on 3 point. If it rests only in two, span must be reduced of 50%



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/m ²	secondary beams permitted span (cm)					primary 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				



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).

load kN/m ²	primary beams permitted span (cm)							props - Class D (20 KN) 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						

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

drop beams formworks



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 Internal 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 beams formworks



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.

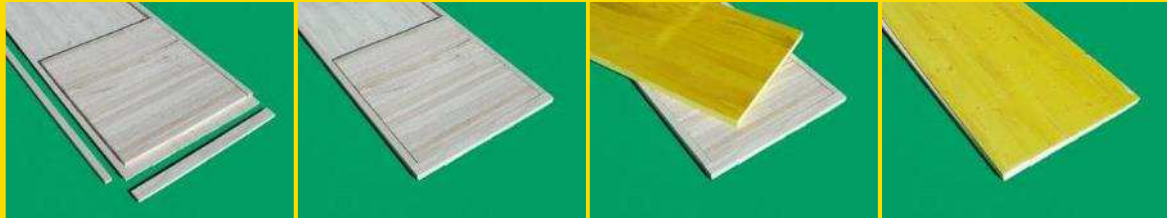
The advantages are the low weight, the long life, the easy use and a variety of uses.

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/m²
- 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/m²
- 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/m²
- 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, 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/m³
- european spruce wood
- fibres approx. 150x0.4 mm



props, drop beams & slab formworks accessories

Cross prop head
code 6011



H20 lock clamp
code 6015



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 H20 h 90
code 6043



Beam forming support H20 h 120
code 604302



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



Retarder falling debris
cod. 55584

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



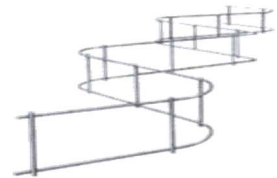
"U" spacer
code 652
able support heavy loads
length 200 cm
height 15-60 mm every 5



"OO" 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.
Laminated cardboard cover
Polystyrene plugs at the ends.

Box length 1250 mm
Box width from 50 to 220 mm
Box thickness 30-36 mm
Bar diameter 8-10-12 mm
Bracket height 60-90-120-150-180-200 mm
Bracket lenght from 320 to 460 mm
Bracket interaxis 100-150-200-250 mm



double code 6591



single code 6592

formwork accessories

Column push & pull
code 55403



code 5540
cm 15-45
every 5 cm

Column bracket



code 5542
cm 0 - 45
every 5 cm
(rectangle)



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 \varnothing 6 a \varnothing 10 mm



Tensioner code 55562

Wedge rapid clamp code 55563

steel base 40 x 100 mm
steel rod \varnothing 6 a \varnothing 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



cod. 604311

Adjustable step form

code 5555

height 17 cm
adjustable width 85 - 160 cm



Circular wall plate

code 5557

to use with steel strip-spacers
and wedge connexion with
steel rod from \varnothing 12 to \varnothing 16 mm



Column plate

code 55430

length cm 65-75-85-
110-135-155-200



Wedge

code 5543



"U" steel profiles

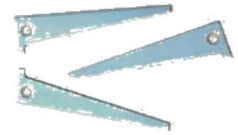
code 502

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

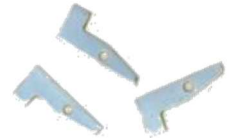
code 5310

length 50 cm



Small wedge

code 5411



Adjustable sheet

5520 (5-45cm)
5521 (0-45cm)



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



release agents

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



release agent BIO90 (wood) code 5510

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

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



release agent BIO99 (steel-wood) code 5512

Release agent BIO99 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 21 and 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.



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