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a **different** brand.



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SCAFFOLDING R

universal system. multidirectional scaffolding.



03 concept 09 façade shoring 11 slab shoring 13 access towers 14 engeneering 16 safety 17 assembly proceadures 18 acessories and components

índay

INDUSTRIAL SCAFFOLDING

THE UNIVERSAL SYSTEM CONCEPT US®

Universal System scaffolding system (US®), offers solutions with high versatility for all kind of jobs. One of its basic element, the Vertical, has rosettes welded at each 0,5m (a.k.a. ring lock system). This rosette has 8 holes with 2 different cutting geometry allowing connecting other components, like horizontals and diagonals, on several angles possibilities. Due to hot deep galvanization, this system as high corrosion resistance.

QUALITY

From raw material acquisition to shipment of equipment procedures, high selection and control standards are used, allowing CATARI to supply a high quality product. Besides demanding internal testes (on quality and resistance) to which all US components are periodically.

all US components are periodically submitted, CATARI subcontracts external ranked laboratories, guaranteeing Quality and Standards. SAFETY

US Scaffolding system was conceived to fulfil most demanding needs on Assembly and Safety usage. While developing this scaffolding system, it has been always present a Strict Standards Comply.

VERSATILITY

This system allows any kind of assembly. Due to innovative rosette geometry, one can have a multiple set of angles combinations, and because of high structural and resistance patterns of that ring lock system, are the main reasons why US® is highly effective and "profitable".

With US it is possible to set light scaffolding configurations with High Loading Capacity and affording on the needed components.

UNIVERSAL APPLICATION

With US system one can expect a solution for any kind of job: Industrial maintenance on silos, tanks or facilities, stage building, suspended structures, access towers, shipyard and aeronautics jobs, etc.. These are some of US possible applications!

3.0m 2.5m 2.0m 1.5m 1.0m 0.5m





VERTICAL AND Horizontal

3.07m 2.57m 2.07m 1.57m 1.09m 0.73m



GENERAL FEATURES



Due to its ring lock system, it is easily assembled on industrial facilities with tanks, silos and pipes. The assembling procedures are the same like on standards scaffolding assembly, respecting always CATARI's safety guidelines.



GENERAL FEATURES

PLATFORMS ECONOMY AND VERSATILITY

A set of practical accessories complement the Universal System scaffolding: galvanized steel and aluminium and wood platforms of the FA-48 scaffolding system can be used in all U beams of this system.

There are, however, platforms with fittings for tubular beams. The full range of scaffolding components makes this modular system, versatile and very efficient due to its range of usage, further diversified.



double deck aluminium and wood; UNIVERSAL SYSTEM





double deck aluminium and wood; FA-48 SCAFFOLDING



steel deck anti-skid floor; FA-48 SCAFFOLDING



steel deck anti-skid floor; UNIVERSAL SYSTEM

GENERAL FEATURES

MULTIFUNCTIONAL SCAFFOLDING

This system allows any kind of assembly. Due to the Rosette's innovative geometry and high structural connecting set values, one can get a huge combination of angles, turning this scaffolding system on a very profitable one.

US system allows technicians do design most variable solutions, where lightness, high loading capacity and affordability are the fundamental selecting arguments.





SPECIAL EQUIPMENT

SILOS STEEL DECKS AND CONNECTING HORIZONTALS





USR **TECHNICAL FEATURES**

FAÇADE **Shoring**

On asset maintenance, when demolition is necessary, keeping the façade as architectural landmark, US system can be used in many façade shoring possibilities, combining its multidirectional resistance capacity with any functional solution demanded by any project or job demand.

Usually, main projects are inside urban zones, hard to access to operate with "heavy" solutions. With US solutions, these difficulties are smaller once there is no need for cranes or special transportation means. This way, one can present building façade shoring, inside, outside or both.

SELF-SUPPORTIVE

Catari's supportive structure, allows a direct way of façade shoring

and stabilization just using counterweights, avoiding hard engineering job on the building foundations. Besides saving on raw materials and human resources, Catari's self-supportive shoring structure optimizes/minimize side-walk occupation, making easy the installation on narrow spaces or hard operating places.

PACKED

Starting from this Self-Supportive and the space optimization occupation, Catari's US shoring structures are Solid-Packed solutions. When dealing with very heavy or very high façades, one can stabilize shoring structure fixing it with Concrete Bases.

FUNCTIONAL **SOLUTIONS ADAPTED** TO MOST COMPLEX JOB FACTORS





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USR TECHNICAL FEATURES

SLAB SHORING

US system, for its high technical features, opens access to most complex engineering projects. Its Bonded-Multidirectional structural concept allows that each element act in block, giving US shoring system high standards, and trust, on technical and operational results.

PROFITABLE AFFORDABLE

Using light and small elements, US shoring system saves resources on high load elevating machinery. Because of its design, and thinking about mounting and dismantling services, one only need a simple hammer, giving to this system a fast return making it a technical/affordable number one choice.

X

У

MAXIMUM LOAD PER m²

blocking H=1.00m

y x	0.73	1.09	1.57	2.07
0.73	73kN	60kN	43kN	33kN
1.09	60kN	42kN	29kN	22kN
1.57	43kN	29kN	20kN	11kN

0.73 1.09 1.57 2.07

0.73 57kN 46kN 34kN 25kN

1.09 46kN 20kN 22kN 17kN

blocking H=1.50m

blocking	
H=2.00m	

1.57	34kN	22kN	15kN	12kN
y x	0.73	1.09	1.57	2.07
0.73	38kN	31kN	22kN	17kN
1.09	31kN	21kN	15kN	11kN
1.57	22kN	15kN	10kN	8kN







ACCESS **TOWERS**

These towers were conceived to give access to high or deep areas at the working site, making it easier to access between different working levels. Its stairs are aluminium made, very light and easy to transport and install.





ENGINEERING AND SAFETY

As market is growing, safety and engineering project development and technical details presentation are becoming more and more demanding. To support these demands, Catari has a high qualified technical team using all needed I&D tools, increasing efficiency and profitability of equipment at the working set. Technical Department Multidisciplinary and Audacity, allows a dynamic search on a close cooperation with market and partners needs and specifications.

specifications.

INCREASING **EFFICIENCY AND PROFITABILITY OF EQUIPMENT AT THE** WORKING SET

fig.01, 02 $\rm e$ 03 view of shoring structure calculation; 14



US® HIGH PERFORMANCE EQUIPMENT. TESTS PROVE IT.

Catari is ISO 9001:2008 certified company, with quality control processes of high technical rigor.

Besides these processes and product certification, carried out by internationally recognized and respected institutions, Catari has internal resources which reinforce quality control and non-conformity prevention, as well as trust on new products development and fabrication. A tight relationship between all Catari's departments is grounded on these daily-basis quality control processes.

INTERNAL RESOURCES WHICH REINFORCE QUALITY CONTROL AND NON-CONFORMITY PREVENTION



DIRECTIONS FOR USE AND SAFETY



Safety is a fundamental value. We consider essential complying the Occupational safety and health Plan, which should be seen, at the workplace, as collaborative endeavor and not as an imposed administrative burden.

Safe Scaffolding usage demands responsibilities for all players, from I&D to Assembly. It is essential to guarantee safety for all users and people on surroundings.

Using Scaffolding without safety assured is an "accident waiting to happen". Risks are bigger for those who are not aware or don't prevent them. Avoid accidents!

Put special attention when starting Scaffolding assembly:

1) Be sure about the scaffolding appropriateness on working height, allowed number of people on the scaffolding at the same time, works to perform and protections demanded by law and work rules.

2) Verify soil stability, verify and use resistant bases to support vertical transmitted loads. Even when soil is stable, one should count with raining possibility which can decrease considerably soil stability. So, it is essential to distribute vertical transmitted loads by more resistant and bigger section area, placed between soils and leveling bases, decreasing applied tensions.



 Comply assembly instructions on provided manuals and follow engineering projects and structural calculations (when and if available).

4) Use individual safety gear.

5) Be sure about right anchorage using prescribed fixating procedures, on most resisting and stable zones, especially on concrete. One should not use points of anchorage which do not deliver needed resistance guarantees.

It is addressed that, in order to determine anchorage points number, one should know in advance if scaffolding will be covered (wrapping the scaffolding), anchorage must be reinforced due to wind action. A specialized technician must deliver needed calculations.

6) Do not let gaps between scaffolding and wall superior to 30cm. Install interior transoms (or double guard rails) ever time these gaps are superior to that measure.

7) Be sure that right access means between working levels are delivered.

RULES AND PROCEADURES





Placing Levelling Bases The settlement of Levelling Bases must be made according to the ground's specificity. According to the technical characteristics of this element, characteristics of this element, namely the screw set, it is possible to get infinite regulations. Whenever possible, it should start the installation from the highest point, adjusting the screw at minimum. Collars will deliver the perpendicular connection (relative to the façade) between levelling bases verticals

between levelling bases, verticals, horizontals and diagonals, setting initial locking and levelling.

Locking Union between the collar perpendicular to the façade, with horizontals, can be using 0.73m or 1.09m, is the next step. Initially, it is desirable to keep the wedges just placed into the corresponding slots and not adjusted, to allow an easier assembly/handling.

Join the parallel to the façade collar with horizontals (1.57m to 3.07m). This operation, together with the previous, finishes assembly of the scaffolding's "frame". It is important at this time to proceed to scaffolding levelling (perpendicular and parallel to the façade).



Diagonals Fitting Diagonals can now be fitted in stabilizing the scaffolding set. Now, assembly can proceed...

Toe Boards

In order to prevent objects from dropping, place toe boards along the working level.

A steel pin on the platform's ends will lock it, preventing it from tilting.

COMPONENTS AND ACCESSORIES











horizontal 35°

base plate/s	start piece		vertical stan	dard without	: <mark>spigot /</mark> w	ith spigot			horizontal						horizontal 35	5°		console / co	onsole's brack	ket tube
code	size (m)	weight (kg) code	size (m)	weight (kg)) code	size (m)	weight (kg)	code	size (m)	weight (kg)	code	size (m)	weight (kg)	code	size (m)	weight (kg) code	size (m)	weight (kg)
AA.BN.500	H 0.50	3.30	US.VTS.500	H 0.50	2.50	US.VT.1000	H 1.00	5.50	US.HZ.730	L 0.73	3.40	US.HZ.U.730	L 0.73	3.00	US.HZ.730.35.D	L 0.73	3.10	US.CL.320	L 3.20	3.90
AA.BN.700	H 0.70	4.50	US.VTS.1000	H 1.00	4.50	US.VT.1500	H 1.50	7.80	US.HZ.1090	L 1.09	4.60	US.HZ.U.1090	L 1.09	4.20	US.HZ.730.35.E	L 0.73	3.10	US.CL.730	L7.30	6.40
US.CL		1.60	US.VTS.1500	H 1.50	6.80	US.VT.2000	H 2.00	10.20	US.HZ.1570	L 1.57	6.00				US.HZ.U.730.35	.D ∟0.73	2.80	US.CL.U.320	L 3.20	3.90
			US.VTS.2000	H 2.00	9.00	US.VT.2500	H 2.50	12.20	US.HZ.2070	L 2.07	7.60				US.HZ.U.730.35	.E L 0.73	2.80	US.CL.U.730	L 7.30	6.40
			US.VTS.2500	H 2.50	11.70	US.VT.3000	H 3.00	14.60	US.HZ.2570	L 2.57	9.30							AA.TC	A 2.00	7.50
			US.VTS.3000	H 3.00	13.70				US.HZ.3070	L 3.07	11.00									



/															
diagonal									steel deck 32	20		steel deck 32	20		steel deck 1
code	size (m)	weight (kg)	code	size (m)	weight (kg)	code	size (m)	weight (kg)	code	size (m)	weight (kg)	code	size (m)	weight (kg)	code
US.DG.1000.730	L 0.73	4.80	US.DG.1500.730	L 0.73	6.10	US.DG.2000.730	L 0.73	7.30	FA.PL.320.0730	L 0.73	5.80	FA.PL.0730	L 0.73	4.80	FA.PL.190.1570
US.DG.1000.109	0 L 1.09	6.40	US.DG.1500.1090	L 1.09	6.50	US.DG.2000.1090	L 1.09	7.70	FA.PL.320.1070	L 1.07	7.90	FA.PL.1070	L 1.07	6.50	FA.PL.190.2070
US.DG.1000.157	0 L 1.57	6.80	US.DG.1500.1570	L 1.57	7.30	US.DG.2000.1570	L 1.57	8.50	FA.PL.320.1570	L 1.57	11.50	FA.PL.1570	L 1.57	8.90	FA.PL.190.2570
US.DG.1000.207	0 L 2.07	7.70	US.DG.1500.2070	L 2.07	7.60	US.DG.2000.2070	L 2.07	10.00	FA.PL.320.2070	L 2.07	14.50	FA.PL.2070	L 2.07	11.30	FA.PL.190.3070
US.DG.1000.257	0 L 2.57	8.80	US.DG.1500.2570	L 2.57	9.40	US.DG.2000.2570	L 2.57	10.60	FA.PL.320.2570	L 2.57	15.10	FA.PL.2570	L 2.57	13.80 01) US.PL.CA.0/45
US.DG.1000.307	0 L 3.07	10.10	US.DG.1500.3070	L 3.07	10.70	US.DG.2000.3070	L 3.07	11.70	FA.PL.320.3070	L 3.07	22.10	FA.PL.3070	L 3.07	16.20	

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steel dec	k 320	steel dec	k 190		acess trap	platform		double decl	<		wood toe b	ooard		transom br	acket		transom brid	dge		
code	size (m)	weight (kg) code	size (m)	weight (kg)	code	size (m)	weight (kg	g) code	size (m)	weight (kg)	code	size (m)	weight (kg) code	size (m)	weight (kg)	code	size (m)	weight (kg)	
US.PL.0730	L 0.73	5.50 US.PL.190.	570 L 1.57	8.80	US.PA.2070	L 2.07	20.10	US.PAM.1570	L 1.57	12.10	US.RP.730	C 0.73	2.70	US.VS.4014	L4.14	44.80	US.VP.1570	L 1.57	9.60	
US.PL.1090	L 1.09	7.30 US.PL.190.	2070 L 2.07	11.60	US.PA.2570	L 2.57	27.50	US.PAM.2070	L 2.07	14.60	US.RP.1090	C 1.09	3.60	US.VS.5014	L 5.14	54.00	US.VP.2070	L 2.07	12.80	
US.PL.1570	L 1.57	9.60 US.PL.190.	2570 L 2.57	14.30	US.PA.3070	L 3.07	30.30	US.PAM.2500	L 2.50	18.00	US.RP.1570	C 1.57	4.50	US.VS.6014	L 6.14	63.50	US.VP.2570	L 2.57	17.50	
US.PL.2070	L 2.07	12.00 US.PL.190.	3070 L 3.07	17.10	FA.PA.2070	L 2.07	19.80	US.PAM.3000	L 3.00	21.00	US.RP.2070	C 2.07	5.40				US.VP.3070	L 3.07	21.00	
US.PL.2570	L 2.57	14.50			FA.PA.2570	L 2.57	22.50				US.RP.2570	C 2.57	6.40				US.VP.U.1570	L 1.57	9.60	
US.PL.3070	L 3.07	16.90			FA.PA.3070	L 3.07	31.40				US.RP.3070	C 3.07	7.60				US.VP.U.2070	L 2.07	12.80	
																	US.VP.U.2570	L 2.57	17.50	
																	US.VP.U.3070	L 3.07	21.00	















transom pas	sage		accessories									-			
code	size (m)	weight (kg)	code	size (m)	weight (kg)	code	size (m)	weight (kg)	code	size (m)	weight (kg)	code	size (m)	weight (kg)	code
US.VP	L 1.50	21.00	(01) AA.PS		0.13	(06)AA.ROSE		1.20	(12) US.CR	A 0.70	6.20	(16) AA.GA.500	A 0.50	1.90	(a) FA.CE
US.VP.U	L 1.50	21.00	(02) AA.EE		0.80	(07) US.AE		1.60	(13) AA.CA.730	L 2.57	3.20	(16) AA.GA.1000	A 1.00	3.20	(b) US.EP.2570
			(03) AA.BC.80	C 0.08	0.01	(08) AA.OG.48		1.30	(14) AA.NA	A 0.70	5.90	(16) AA.GA.1500	A 1.50	4.80	(b) US.EP.3070
			(04) AA.OL.120	C 0.12	0.20	(09) AA.OT.48		1.10	(15) AA.R.N.132/N	S		(16) AA.GA.2000	A 2.00	7.00	
			(04) AA.OL.190	C 0.19	0.22	(10) US.CU		3.90	(15) AA.R.N.132/N	ST		(16) AA.GA.250	A 0.50	1.90	
					2 00		A 0 70	6.80		A 0.25	1.00				





console / console's bracket tube



\bigcirc

ck **190** / corner 45°

	size (m)	weight (kg)
1570	L 1.57	8.80
2070	L 2.07	10.90
2570	L 2.57	13.40
3070	L 3.07	17.10
)/45	L 0.73	6.80

steel deck 320

eight (kg)	code	size (m)	weight (kg)
30	US.PL.320.0730	L 0.73	5.00
.90	US.PL.320.1090	L 1.09	7.20
.40	US.PL.320.1570	L 1.57	10.10
.10	US.PL.320.2070	L 2.07	12.70
30	US.PL.320.2570	L 2.57	15.30
	US.PL.320.3070	L 3.07	18.20







MADE IN U.E.

