

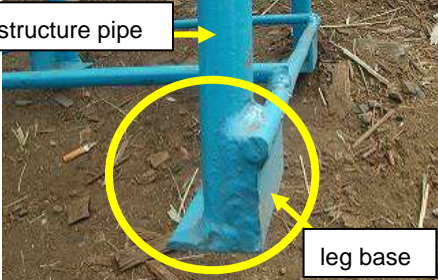

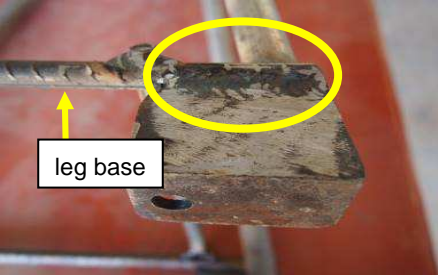
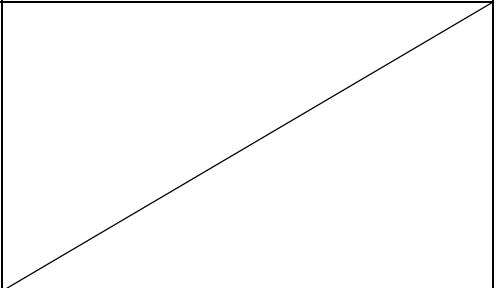
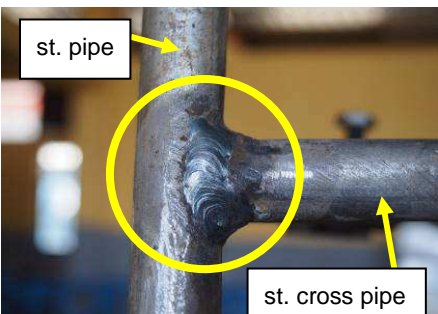



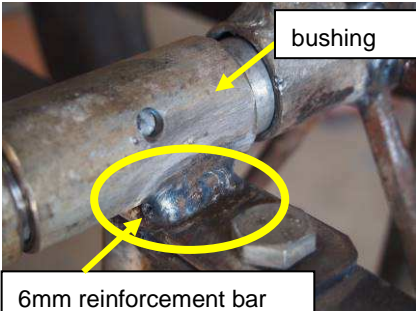
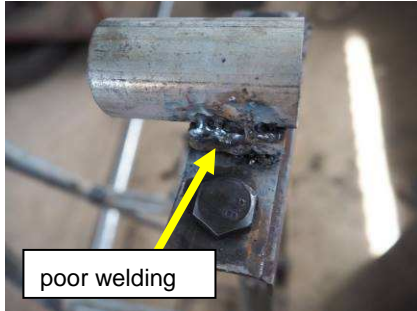
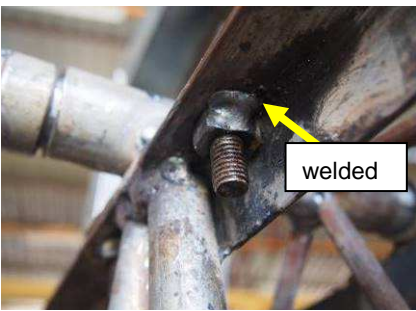

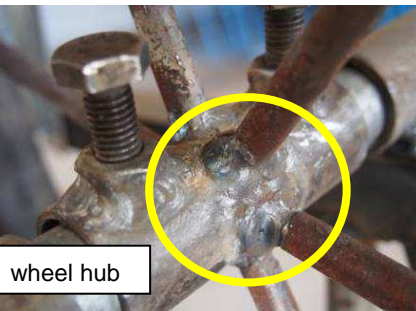








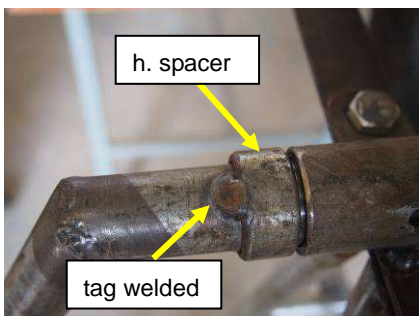


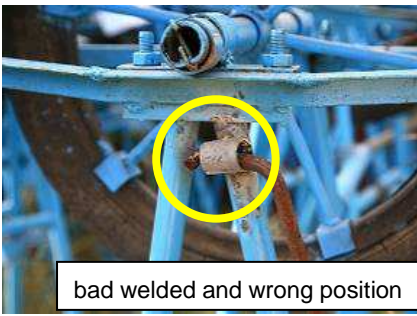
Rope Pump MANUFACTURING checklist for quality control

	Description	Good sample	Bad sample
A Welding			
General			
1	Check if welding jigs are used for welding of the main parts (wheel, structure frame and bushings)		
2	Check if the pump parts are not deformed due to welding (heat).		
A1 Structure			
3	Check if the leg base angle iron is properly welded with the structure pipe.		
4	Check if the leg support is properly welded with the leg base.		
5	Check if the structure cross pipes are properly welded with the structure pipes.		

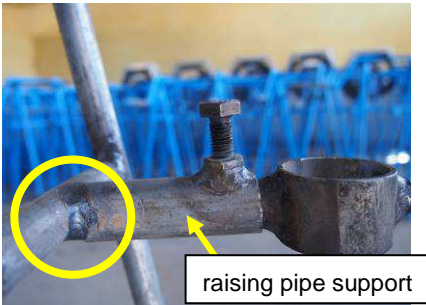
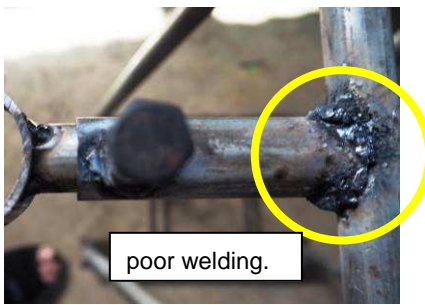

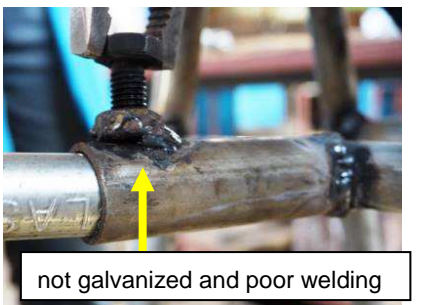

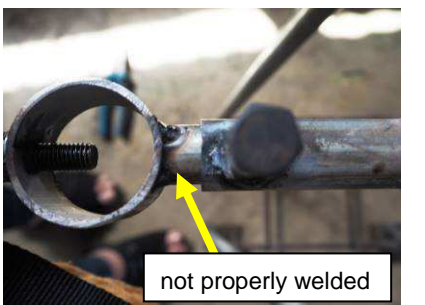
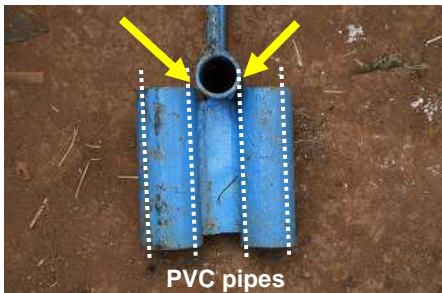
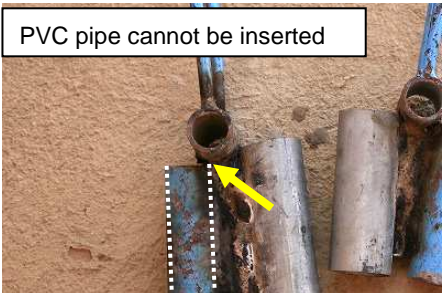
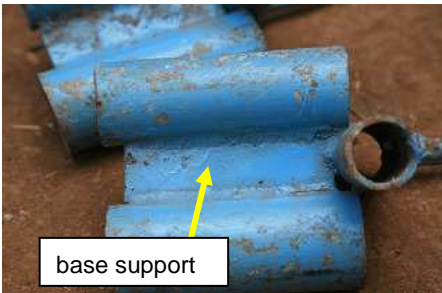

Rope pump manufacturing check list for quality control, 4rd Edition June 2016

	Description	Good sample	Bad sample
A2	Bushing		
6	Check if the bushing supports (angle iron) are properly welded with the upper part of the structure pipes.		
7	Check if the bushing is properly welded with the bushing base (flat iron) and welding support (6mm reinforcement bar). Check if the seam is filed out and located at the top of the bushing.		
8	Check if the bushing support (angle iron) is properly welded with the M10 galvanized nuts.		
A3	Wheel		
9	Check if the wheel hub is properly welded with the spokes. Check if the spokes are centered on the wheel hub.		
10	Check if the wheel hub is properly welded with the M10 galvanized nuts.		




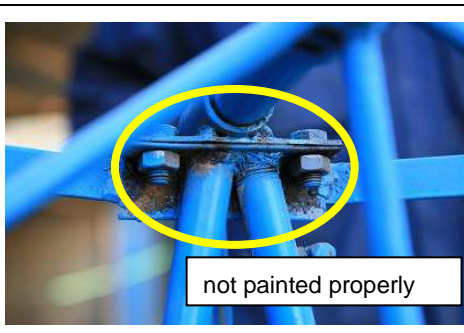
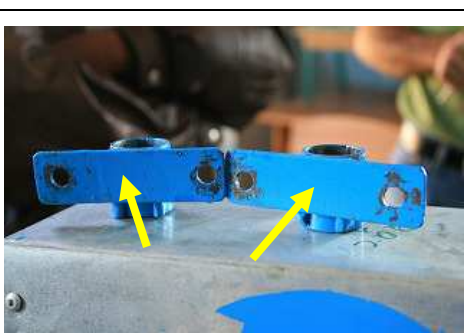

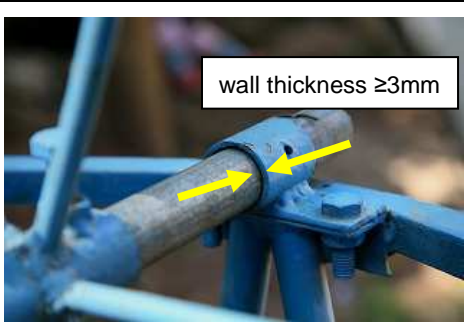
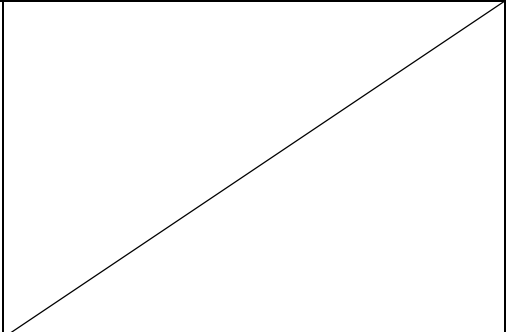
Rope pump manufacturing check list for quality control, 4rd Edition June 2016

	Description	Good sample	Bad sample
11	Check if the wheel clamps are properly welded with the spokes.		/
A4 Handle			
12	Check if the handle bend is properly welded or bended.		
13	Check if the handle spacer is properly welded (strong tag welded on the outside).		
A5 Pump lock			
14	Check if the pump lock hub is properly welded with the structure pipe.		
A6 Wheel cover support			
15	Check if the wheel cover support is properly welded to the structure (there are different rope pump models, please check the drawing).	/	/

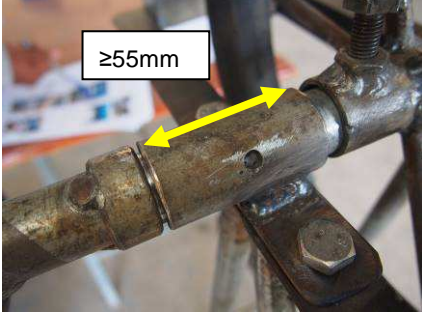
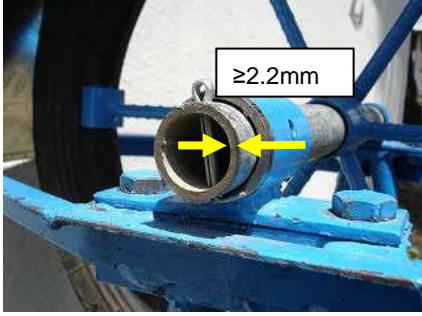
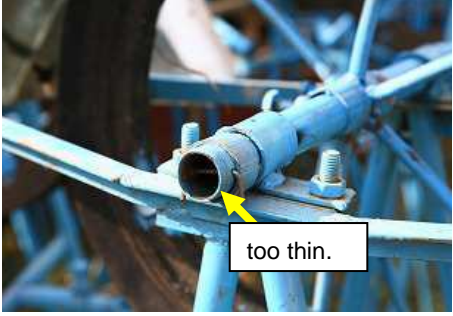
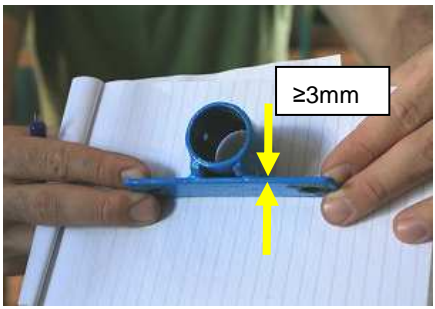
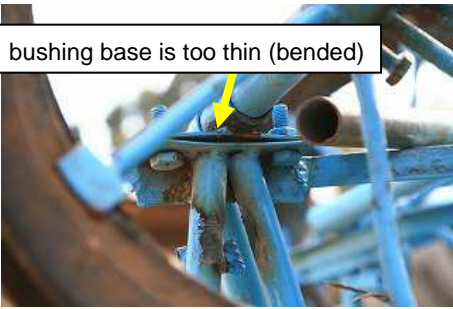

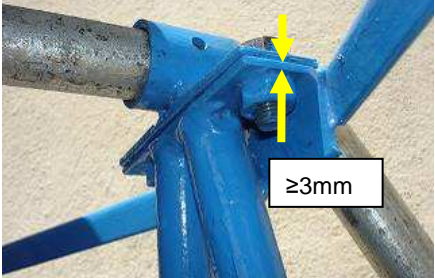

Rope pump manufacturing check list for quality control, 4rd Edition June 2016

	Description	Good sample	Bad sample
A7	Raising and return pipe support		
16	Check if the raising pipe and return pipe supports are properly welded horizontally to the structure cross pipes.		
17	Check if the galvanized M10 nuts are properly welded with the raising pipe and return pipe holder supports.		
18	Check if the pipe holders are properly welded with the pipe holder sliders at exactly 90 degree.		
A8	Guide box (Turning point)		
19	Check if the raising pipe support and the rope catcher pipe support are welded to the rope protection base in a way that the PVC pipes can be inserted easily.		
20	Check if the base support is properly welded with the raising pipe support and rope catcher pipe support.		


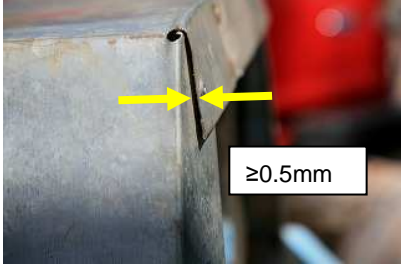


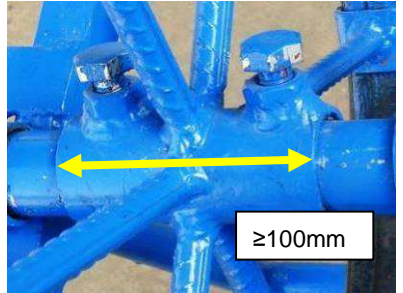
Rope pump manufacturing check list for quality control, 4rd Edition June 2016

	Description	Good sample	Bad sample
B Painting			
21	Check if welding slag and sharp edges have been removed before painting. Check if all the parts (at least all the parts that are not galvanized and welded) are with antirust before painting the primary paint.		
22	Check if the spoke clamps are painted with antirust before assembling.		 <p>no antirust on the inside of the clamp, the inside starts to rust</p>
23	Check if the bushing support is properly painted.		 <p>not painted properly</p>
24	Check if the backside of the bushing base is painted and dried before assembling.		
25	Check if all pump parts have been properly painted (at least all the parts that are not galvanized and welded).		
C Dimensions of critical parts			
(the dimensions of all other pump parts can be found in the technical drawings)			
C1 Thickness of materials			
26	Check if thickness of the bushing is 3mm or more (check if the handle fits the bushing).	 <p>wall thickness $\geq 3\text{mm}$</p>	


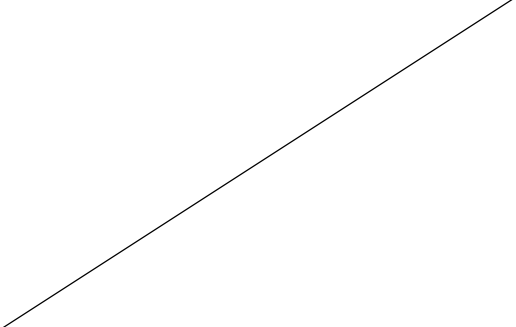





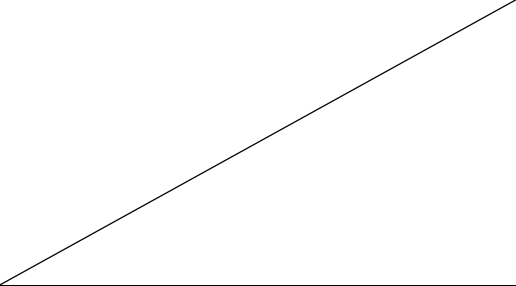
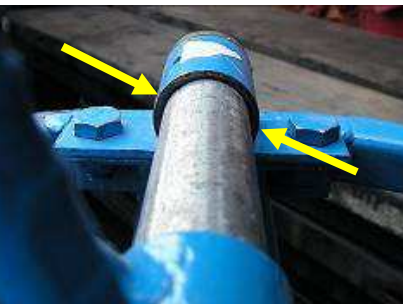

Rope pump manufacturing check list for quality control, 4rd Edition June 2016

	Description	Good sample	Bad sample
27	Check if the length of the bushing is 55mm or more		/
28	Check if the thickness of the handle is 2.2mm or more.		
29	Check if the thickness of the bushing base is 3mm or more.		
30	Check if the thickness of the spoke clamps are according to the drawings.		/
31	Check if the thickness of the busing support is 3mm or more.		


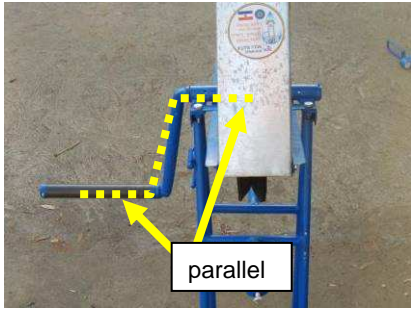
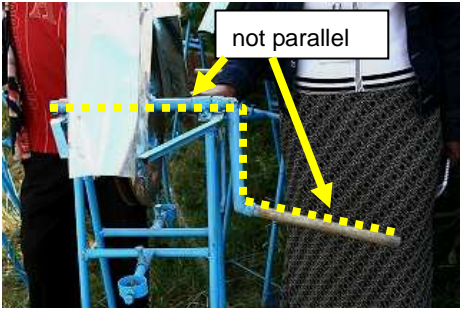


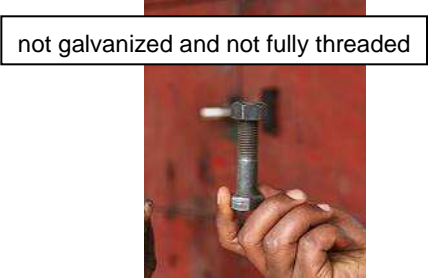
Rope pump manufacturing check list for quality control, 4rd Edition June 2016

	Description	Good sample	Bad sample
32	Check if the diameter of the spokes is 8mm or more (according to the drawings).		
33	Check if the thickness of the cover sheet metal is 0.5mm or more and is galvanized.		
C2 Length and diameter			
34	Check if the distances between the two holes (center to center) on the leg angle iron are according to the drawings.		
35	Check if the spoke lengths are equal for all spokes, according to the drawings.		
36	Check if the length of the hub is 100mm or more. Check if the thickness of the hub is 3mm or more (check if the handle fits inside)		

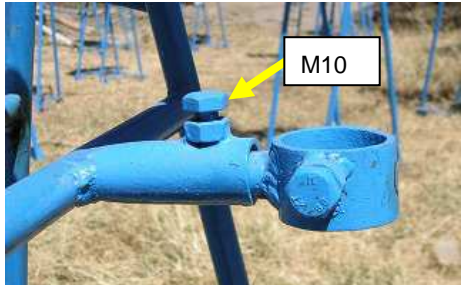



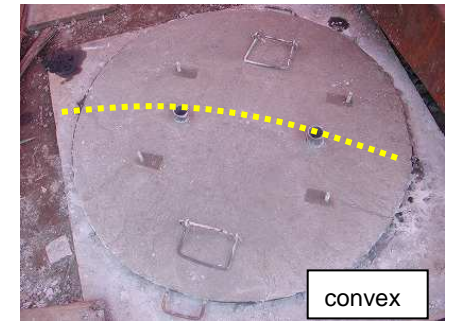
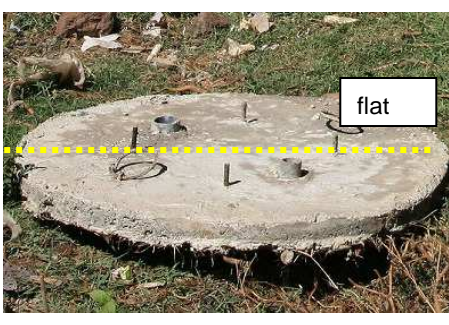
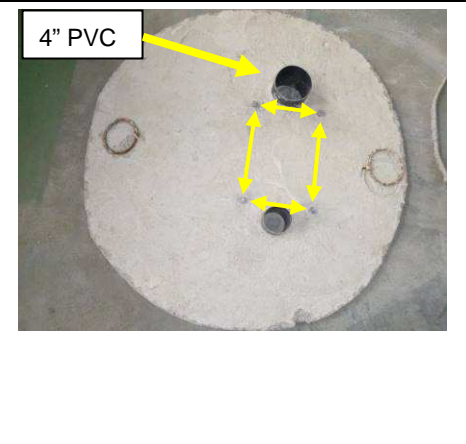
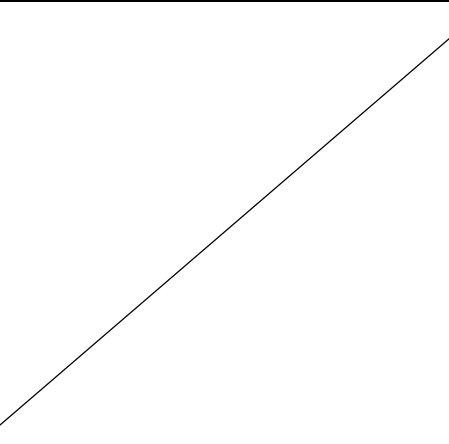

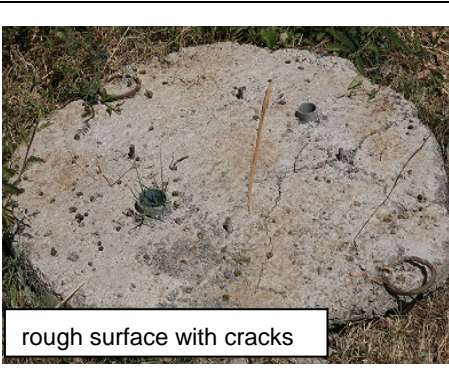
Rope pump manufacturing check list for quality control, 4rd Edition June 2016

	Description	Good sample	Bad sample
37	Check if the diameter of the car tire is approx. 14". Check if the outer diameter of the wheel rubber is according to the drawing.		
38	Guide box: check if the guide box fits in the PVC pipe of the well cover (check if the dimensions of the guide box are according to the drawings, depending on the model).		
39	Check if the lengths of the raising and return pipe supports are according to the drawing.		
40	Check if the lengths of the raising and return pipe sliders are according to the drawing.		
D Alignment			
41	Check if the bushing is aligned with the handle. Check if the total clearance between handle and bushing is between 0.5 and 1mm		


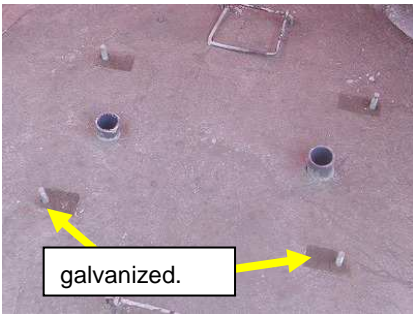





Rope pump manufacturing check list for quality control, 4rd Edition June 2016

	Description	Good sample	Bad sample
42	Check if the wheel is properly aligned (no wheel distortion).		/
43	Check if the angles of the handle are according to the drawing. Check if the handle grip is parallel to the axle.		
44	Check the alignment of the pump as a whole (is it straight and are all four legs touching the ground?)		/
E Materials			
45	Check if all pipes used for the manufacturing of the structure frame, the handle, the bushings, the wheel hub and the guide box are GI pipe (Galvanized Pipes), class B.		
46	Check if all the material used are free of any damage.		
47	Check if the bolts and nuts are galvanized and fully threaded.		

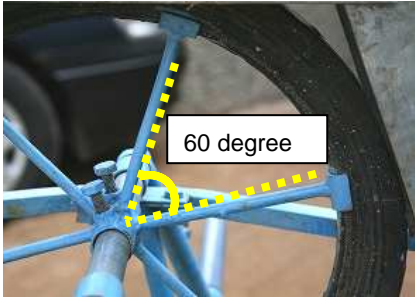


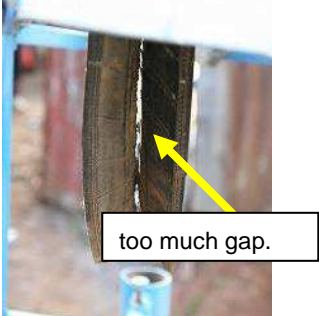

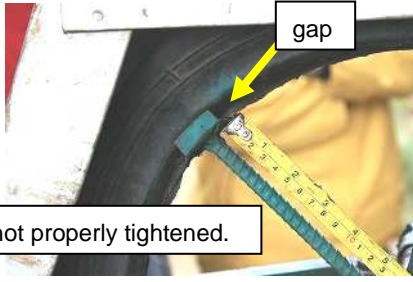

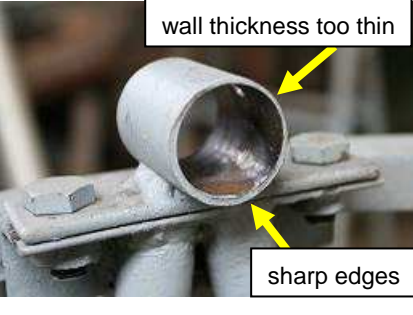
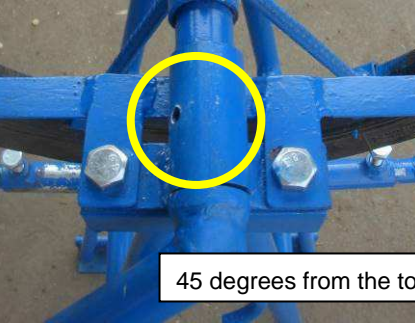

Rope pump manufacturing check list for quality control, 4rd Edition June 2016

	Description	Good sample	Bad sample
48	Check if the sizes of bolts and nuts for the main body are M10 and for the cover are M6 (length according to the drawings). Check if all bolts and nuts are galvanized.		
49	Check if the wheel rubbers have no damage and distortion.		
F Concrete well cover and reducer blocks			
50	Check if the shape of the well cover is convex to allow water to flow off. Check if the diameter of the well cover is according to the drawing.		
51	Check if the distance between the anchor bolts and the distances between the PVC pipes are according to the drawings. Check that bolts and PVC pipes are pointing straight upwards. Check if the diameter, length and quality of PVC pipes are according to the drawings. A 4" PVC pipe is recommended.		
52	Check if the surface of the well cover is smooth. Check if the mix ratio for concrete is according to the drawing, check if the sand is free of silt and organic impurities, this can only be done if you are present during the manufacturing process).		





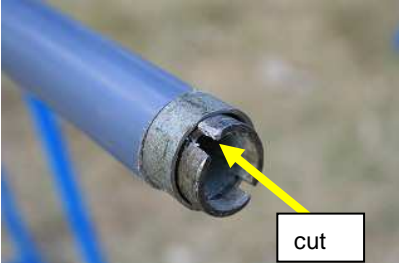



Rope pump manufacturing check list for quality control, 4rd Edition June 2016

	Description	Good sample	Bad sample
53	Check if the well cover is made by use of a mold. Check that concrete is kept wet during curing.		/
54	Check if the anchor bolts are galvanized and fully threaded.		
55	Check if the diameters of the re-bars and distances between the re-bars are according to the drawings. Check if locations of the well cover handles are according to the drawings.		
56	The use of reducer blocks is not mandatory. If they are used following need to be checked. Check if the surfaces of the reducer blocks are smooth. Check if the mix ratio for concrete is 1 cement : 2 sand : 3 gravel (check if the sand is free of silt and organic impurities).		/
57	Check if the reducer blocks are made by use of a mold. Check that concrete is kept wet during curing.		/



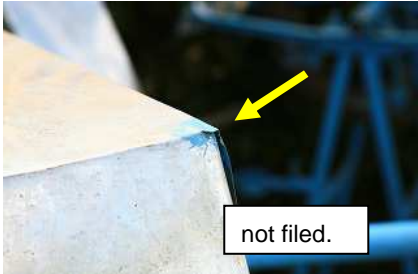



Rope pump manufacturing check list for quality control, 4rd Edition June 2016

	Description	Good sample	Bad sample
H Miscellaneous			
58	Check if the angles between the spokes are equal (60 degree). Check if the wheel has at least six spokes.		
59	Check if the contact of two wheel rubbers is closed.		
60	Check if the connections between spoke clamps and wheel are tight.		
61	Check if the bushing is properly chamfered/ filed (no sharp edges).		
62	Check if the oil hole is on top or max 45 degrees from the top to allow easy lubrication. Check if the diameter of the hole is 6mm.		

Rope pump manufacturing check list for quality control, 4rd Edition June 2016

	Description	Good sample	Bad sample
63	Check if the rotation of handle is smooth (the handle rotates by itself when it is upper side).		/
64	Check if the wheel does not touch the wheel cover (to be able to move freely).		/
65	Check if the horizontal displacement of handle is small enough, according to the drawings.	 <p data-bbox="762 1077 1007 1122">gap should be small</p>	 <p data-bbox="1257 1010 1449 1055">too much gap.</p>
66	Check if the stopper cut at the end of the handle grip is bended in the right direction to avoid it from 'cutting' into the hand of the user.	 <p data-bbox="847 1373 935 1417">cut</p>	 <p data-bbox="1066 1373 1501 1417">stopper cut bended in wrong direction</p>
67	Check if the pump lock moves easily.		/
68	Check if the raising pipe and return pipe supports are smoothly adjustable.	 <p data-bbox="587 2029 959 2074">should be smoothly adjustable.</p>	/

Rope pump manufacturing check list for quality control, 4rd Edition June 2016

	Description	Good sample	Bad sample
69	Check if the raising pipe and return pipe holder positions are at the middle of the structure cross pipes.		/
70	Check if the corners of the wheel cover are filed (to avoid sharp edges).		
71	Check if the bolts are able to tighten and loosen easily for bushing plate, handle, hub and raising pipe support (no welding sparks or damage on the threads).	/	
72	Check if the aluminium or sheet metal name plate is attached to the pump (at least mentioning the name of the manufacturer, serial number, date of production and contact details).		/
73	Check if the operation direction arrow is fixed in the right direction		/