

**Ducast Factory LLC**  
**Quality plan for manhole tops and gully tops to EN 124:Part 2:2015**

Aspect of inspection	Method of inspection	Frequency of inspection	Document retention period
<b>(A) Receiving inspection</b>			
Steel/iron scrap	Chemical analysis	Each delivery	1 Year
Pig iron	Chemical analysis	Each delivery (1)	1 Year
Scrap returns	Chemical analysis	Each ladle	1 Year
Additives	Supplier test certificate	Each delivery (1)	1 Year
New sand for moulds/cores	Supplier test certificate	Each delivery (1)	1 Year
	Sieve Analysis	Each delivery <sup>(1)</sup>	
<b>(B) Process control</b>			
Moulding sand characteristics	Laboratory	Minimum once in a shift	1 Year
Mould	Visually	Regularly	-
Ductile Iron additives	Weigh/measure	Each treatment ladle	-
Pouring temperature	Measure	Frequently	1 Year
Composition of metal/analysis	Analysis	Each treatment	5 Years
<b>Mechanical Properties</b>	ISO 1083 or EN 1563 - Grade 500/7, 600/3		5 Years
- tensile strength		1 Test bar /Day	
- elongation		Each treatment ladle	
- nodularity			
<b>(C) product testing of finished products</b>			
General for surface defects	Visual	Every unit	-
Clear opening	Measure	1:5000 <sup>(2)</sup>	5 Years
Depth of insertion	Measure	1:5000 <sup>(2)</sup>	5 Years
Total clearance	Measure	1:5000 <sup>(2)</sup>	5 Years
Seating	Visual	1:5000 <sup>(2)</sup>	5 Years
Frame depth	Measure	1:5000 <sup>(2)</sup>	5 Years
Test load (Load Bearing Capacity)	Test	1:5000 Min. <sup>(3)</sup>	10 Years
Tilt test (Compactability of seating)	Test	1:5000 Min. <sup>(3)</sup>	10 years
Pull-test (Securing of cover in frame)	Test	1:5000 Min. <sup>(3)</sup>	10 years
Marking	Visual	Every unit	5 Years
Painting	Measure (Thickness)	Random <sup>(4)</sup>	1 Year
<b>(A-6) Calibration, Packaging, Non Conforming Product</b>			
Tensile Testing Machine	Calibration Certificate	Once in a year	5 Years
Load testing machine	Calibration Certificate	Once in a year	5 Years
Other measuring instruments	Calibration Certificate	Once in a year <sup>(5)</sup>	5 Years
Packaging	Visual	Regularly	-
Non Conforming products	Inspection	Daily	5 Years
<sup>(1)</sup> Random checks for material received from suppliers having certified quality assurance system. <sup>(2)</sup> Every modification on the pattern    <sup>(3)</sup> At least once in 12 months. <sup>(4)</sup> Only for epoxy coatings <span style="float: right;"><sup>(5)</sup> Calibration or verification with calibrated gauges.</span>			
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