



中国认可
国际互认
检测
BGLQ22F



交通GJC实工 2020-003

报告编号: JC2022CP144



Test reports

Entrusting party: _____

Product name: _____

Corrugated beam plate
(Hot dip galvanizing coating)

Test category: _____

Commissioned sampling inspection

Date of approval: _____

12.12.2022

China Transport Telecommunications and Information Center



China Transport Telecommunications and Information Center

Test reports

共 6 页 第 2 页

报告编号: JC2022CP144

Entrusting party	冠县冠通交通设施有限公司	Order number	JC2022CP144
Product name	Corrugated beam plate (Hot dip galvanizing coating)	Model specification	DB01 (4320×310×85×3) mm
Production unit	冠县冠通交通设施有限公司	Detection site	Workshop of plant
Series number	-/-	Number of samples	JC2022CP144
Date of sampling/ Date of production	17.09.2022/01.08.2022	Sample receiving date	22.09.2022
Sampling place/ Sampling person	Factory warehouse/Liupeng	Sampling basic number	50
Test date	17.09.2022/06.10.2022	Sample quantity	3
Test item	Appearance quality, shape size and allowable deviation, material requirements, processing requirements, galvanized layer adhesion, galvanized layer thickness, polyester coating thickness, galvanized layer uniformity, galvanized layer bending resistance, galvanized layer salt spray corrosion resistance, galvanized layer adhesion, polyester coating uniformity, polyester coating adhesion, polyester coating bending resistance, polyester coating abrasion resistance, polyester coating resistance impact performance, polyester coating chemical resistance, solvent corrosion performance, polyester coating salt spray corrosion performance, polyester coating moisture and heat resistance, polyester coating ammonia weather resistance (artificial accelerated aging performance), temperature change resistance.		
Main equipment and serial numbers	YQ-2048-11 digital vernier caliper, YQ-2049-10 digital micrometer, YQ-2015-08 tape measure, YQ-2051 universal Angle ruler, YQ-2040-03 microcomputer controlled electronic universal testing machine, YQ-2052-01 Electronic balance, YQ-2052-02 Analytical balance, YQ-2052-03 Hydrostatical Balance, YQ-2014-03 gauge, YQ-3161-02 grille knife, YQ-2074 coating adhesion tester, YQ-2011-03 coating thickness gauge, YQ-2015-04 Straight ruler (50cm), YQ-2059 abrasion meter, YQ-2085 Paint film bending tester, YQ-2039 salt spray corrosion resistance test chamber, YQ-2084 impact testing machine, YQ-2038-05 constant temperature and humidity environment test chamber, YQ-2042-02 xenon arc lamp artificial aging test chamber, YQ-2057 color difference meter, YQ-2038-03 electric blast drying chamber.		
Test environment	Factory temperature: 21.0°C Laboratory temperature: (22 ~ 23) °C Laboratory relative humidity: (50 ~ 55) %		
Test/ Evaluation Criteria	1.GB/T 31439.1-2015 "Corrugated beam steel guardrail Part 1: two-wave beam steel guardrail" 2.GB/T 18226-2015 "Technical conditions for anti-corrosion of steel components of Highway traffic engineering"		
Test conclusion	The samples of hot-dip galvanized coating and wavy beam plate sampled by our unit are all in line with the requirements of testing (judging basis).		

检测单位: (检测专用章)

检测: 罗金 审核: 张永春 批准: 张永春 批准日期: 2022 年 12 月 12 日

China Transport Telecommunications and Information Center

Test reports

报告编号: JC2022CP144

共 6 页 第 3 页

1	Sample description	<ol style="list-style-type: none">1, Sample state: surface intact, no defects;2. The coating color of the outer surface of the sample is green.
2	Detection specification	<ol style="list-style-type: none">1, Single detection conclusion column '/' indicates that this does not make a decision;2. Client's technical requirements: screw hole 10-40*223. Additional information of the order: 2022-CY-144
3	Deviation statement	None

China Transport Telecommunications and Information Center

Test reports

报告编号: JC2022CP144

共 6 页 第 4 页

Item number	Test item		Technical Requirements	Test Result	Single test result	
1	Appearance quality	Cold-formed member	The surface of the cold-formed black member shall be free of defects such as cracks, bubbles, folds, inclusions and end-face delamination, but slight pits, bumps, indentations and scratches of no more than 10% of the nominal thickness are allowed; The cutting surface and mounting hole should be free of rolling edges, flying edges and serious burrs; no welding and lengthening.	Conform	Up to standard	
		Zinc coating	The surface of the galvanized component should have the same color, uniform and complete plating parts should have no defects such as leakage plating; there should be no run-off, drips or excess clumps on the surface.	Conform		
		Polyester coating	Coating surface should be smooth, uniform color, no obvious impurities, process carbonization or coking phenomenon; the coating should be continuous, no visible bubbles, pores, cracks, bare matrix and other defects.	Conform		
2	Processing requirement		Wavy beam and plate should be formed by continuous roll forming. The bolt holes on the corrugated beam plate should be positioned accurately, and all splicing screw holes at each end should be punched at one time.	Conform	Up to standard	
3	Overall dimension deviation from allowable	Corrugated beam length L (mm)	4320 ⁺¹	4321	Up to standard	
		Plate width B (mm)	310 ⁺¹	311	Up to standard	
		External wave height H (mm)	85 ⁺¹	85	Up to standard	
		Internal wave height h (mm)	83 ⁺²	82	Up to standard	
		Fence plate base plate thickness t(mm)	3 ^{+0.08}	3.11	Up to standard	
		Bolt hole distance	D (mm)	4000 ⁺²	4000	Up to standard
			X (mm)	160 ⁺¹	160	Up to standard
			Y (mm)	100 ⁺¹	100	Up to standard
		Connecting bolt	Nominal size a(mm)	40 ⁺¹ _{0.1}	39.8	Up to standard
			Nominal size b(mm)	22 ⁺¹ _{0.1}	22	Up to standard
		Splice hole	Nominal size a(mm)	40 ⁺¹ _{0.1}	39.8	Up to standard
			Nominal size b(mm)	22 ⁺¹ _{0.1}	22	Up to standard
		Bending degree (mm/m)		≤1.5	0.4	Up to standard
		Total curvature (%)		≤0.15	0.02	Up to standard
Notch perpendicularity tolerance (°)		≤30	20	Up to standard		
4	Materials require	Mechanical properties	Tensile strength (MPa)	≥375	471	Up to standard
		Yield strength (MPa)	≥235	391	Up to standard	
		Elongation after fracture (%)	≥26	33.0	Up to standard	

China Transport Telecommunications and Information Center Test reports

报告编号: JC2022CP144

共 6 页 第 5 页

Item number	Test item	Technical Requirements	Test Result	Single test result
5	Adhesion of galvanizing layer	After the adhesion test, the zinc layer does not peel, bulge, crack or layer up to the extent that it can be wiped off with bare fingers	Conform	Up to standard
6	Adhesion of galvanized layer (g/m ²)	≥275	431	Up to standard
7	Galvanizing Thickness (μm)	≥39	57	Up to standard
8	Coating uniformity (%)	The difference between the maximum thickness and the average thickness should not be greater than 25% of the average thickness.	20	Up to standard
		The difference between the average thickness and the minimum thickness should not be greater than 25% of the average thickness.	17	
9	Resistance to bending of galvanized layer	After the bending test, the zinc layer in the bending part should not be stripped, not raised, not cracked or raised to the extent that can be wiped off with bare fingers.	Conform	Up to standard
10	Corrosion resistance of zinc coating to salt spray	After the 168h neutral salt spray test, there should be no red rust phenomenon	Conform	Up to standard
11	Polyester coating thickness (μm)	≥76	127	Up to standard
12	Adhesion of polyester coating	The coating and the metal matrix should be well attached, the plate members are smooth after the grid test, and the coating has no peeling except the cross cutting place.	Conform	Up to standard
		The test results reached the requirement of level 0 after the bonding test.	level 0	
13	Polyester coating uniformity (μm)	Difference between maximum and minimum thickness < 45μm	38	Up to standard
14	Resistance to bending of polyester coating	After bending performance test, there should be no visible cracks and coating peeling phenomenon	Conform	Up to standard
15	Wear resistance of polyester coating (mg)	After the wear test, the mass loss measured per 1000 revolutions should be less than 50mg	10	Up to standard
16	Impact resistance of polyester coating	After the impact test, the coating does not crack, crack or fall off except for the impact part	Conform	Up to standard
17	Corrosion resistance of polyester coating to chemical solvents	Coated with 30% sulfuric acid; After 720h of solution corrosion, the coating should have no bubbles, dissolution, swelling, softening, loss of bonding and other phenomena, and the test solution should have no turbidity, fading and packing precipitation	Conform	Up to standard
		Chemical solvent corrosion resistance of polyester coating After the coating is corroded by 10%NaCl solution for 720h, the creep layer should have no bubbles, dissolution, swelling, softening, loss of bonding and other phenomena, and the test solution should have no turbidity, fading and packing precipitation	Conform	
		After the coating is corroded by 1%NaOH solution for 240h, the coating should have no bubbles, dissolution, swelling, softening, loss of bonding and other phenomena, and the test solution should have no mud turbidity, fading and settling of filler	Conform	

China Transport Telecommunications and Information Center

Test reports

报告编号: JC2022CP144

共 6 页 第 6 页

Item number	Test item	Technical Requirements	Test Result	Single test result			
18	Salt spray corrosion resistance of polyester coating	After 168h neutral salt spray test, except for scratches on both sides of 0.5mm range, the coating should not bubble, peel, rust and other phenomena	Conform	Up to standard			
19	Moisture and heat resistance of polyester coating	After 168h moisture and heat resistance test of the coating, there should be no foaming, wrinkling, peeling, rust and other phenomena of the coating in addition to 0.5 mm on both sides of the scratch part	Conform	Up to standard			
20	Weather resistance of polyester coating	General requirements for appearance quality	After the accumulated energy of the artificial accelerated aging test reaches $3.5 \times 10^6 \text{ kJ/m}^2$, the appearance of the product should not have obvious defects such as powder, spots, bubbles, cracks, softening, peeling, rust spots, etc	Conform	Up to standard		
		Requirements for quality grade evaluation of aging test of exterior coating anti-corrosion layering	Discoloration grade	3		3	
			Pulverization grade	1		0	
			Cracking grade	Cracking quantity		1	0
				Cracking size		S1	S0
			Foaming grade	0		0	
			Rust grade	Number of rust points		1	0
				Size of rust points		S1	S0
			Peeling grade	Peeling area		0	0
				Size of rust points		S0	S0
Comprehensive rating scale	1		1				
21	After the temperature change test	After the temperature alternating test, the appearance of the coating should not be powder, softening, spots, wrinkles, bubbles, cracks, peeling and other defects	Conform	Up to standard			
Note: The bending resistance of the coating, the impact resistance of the polyester layer, the wear resistance of the polyester coating and the weather resistance of the polyester coating are standard samples of 0.3mm tinplate made of the same process and the same raw materials.(blank below)							