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EXTRUDING TECHNOLOGY OF PLASTIC FILLER ON SLAB JOINT OF CFRD

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Demand of Plastic Filler Filling

According to test result, only if plastic filler be dense and tightly sticking to concrete can it flow into and seal an open joint. Therefore, it is fatally important to insure the quality of density and sticking to concrete of plastic filler during construction.

Process of Plastic Filler Manual Filling

1. Apply of primer on concrete surface;
2. Fill of plastic filler by blocks, sticks or thick plates to the design profile;
3. Cover the protecting sheet.



Drawbacks of Manual Filled Plastic Filler

1. Voids in the filled plastic filler can't be avoided. The degree of density could be as low as 80 percent in some project. Not only have it reduced the filling volume, but the voids in plastic filler could unsteady and even break the flowing of the filler into joint, and invalid its sealing effect.
2. Climbing up-and-down by the rope ladder could also be dangerous during manual work.

BRIEF OF WENQUAN CFRD

Dam height: 102 m;

Crest length: 306 m;

Upstream dam slope: 1V:1.5H;

Joint length: 3080 m;

Cross section area of joint:

Compressive vertical joint 94 cm²

Tensile vertical joint 445 cm²

Perimeter joint 1060 cm²

Construction time: 2010

Process of extruding work

- Cleaning of joint surface→
- Laying out PVC rod on joint→
- Locating winch wagon on top→
- Letting down extruder to start point→
- Applying primer on joint surface→
- Letting down wheel loader of plastic filler→
- Extruding upward→
- Covering sheet on the filler→
- Tamping cover sheet with hammer blow→
- Fixing flat iron and bolt on cover sheet→
- Trimming cover sheet→
- Sealing sides of cover sheet with thick primer.

Traction of extruder set



Extruding along compression joint



Extruding along tension joint



Extruding along perimeter joint



Extruding along parapet bottom joint



Extruded Cross Section of GB Plastic Filler



Excellent Adhesion to Concrete Surface



Covering of GB-EPDM plate



Hammer compression of GB-EPDM Cover



Extruding Productivity

Type of joint	Cross section area /cm ²	Measured productivity	
		in length /m·h ⁻¹	in volume /m ³ ·h ⁻¹
Vertical compression	94	90	0.85
Vertical tension	445	40	1.80
Perimeter	1060	19	1.98
Parapet bottom	440	33	1.44

Conclude Remarks

- Extruding technology has already successfully extruded GB plastic filler in practice to all types of slab joints;
- The maximum area of extruding profile has exceeded 1000 cm²;
- The productivity has reached 2 m³/h, much bigger than that of manual paving.
- After extruding, plastic filler will be warmer, softer, and easier stick to concrete and cover sheet.

THANK YOU

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