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 pf 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

<table>
<thead>
<tr>
<th>Type of joint</th>
<th>Cross section area /cm²</th>
<th>Measured productivity</th>
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<tbody>
<tr>
<td></td>
<td></td>
<td>in length /m·h⁻¹</td>
</tr>
<tr>
<td>Vertical compression</td>
<td>94</td>
<td>90</td>
</tr>
<tr>
<td>Vertical tension</td>
<td>445</td>
<td>40</td>
</tr>
<tr>
<td>Perimeter</td>
<td>1060</td>
<td>19</td>
</tr>
<tr>
<td>Parapet bottom</td>
<td>440</td>
<td>33</td>
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</tbody>
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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.
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