



PROJECT PROFILE

LORENZETTA CREEK HYDRO PROJECT



PROJECT DATA

- Location – Hope, B.C. Canada
- Engineer – Niko Kozobolidis, Hydro Sys Consultants
- Contractor – Zella Corporation
- Concrete Producer – Hope Ready Mix
- Volume – ~100m³

PRODUCTS FEATURED

- TUF-STRAND™ SF
- Macro-synthetic fiber

SCOPE OF PROJECT

- Pipeline stabilization coming down a mountainside



PROJECT SUMMARY

PROBLEM: A small hydroelectric generating station drawing water from the top of a mountain near Hope BC, Canada required pipe infrastructure to safely bring water down the mountain with a vertical change in elevation of 700 m (2300 ft). At several intervals along the pipeline route, stabilization was required for the dynamic loads of shifting pipe and changes in alignment with moving water and extreme head forces.

SOLUTION: Within the concrete thrust blocks, 50 mm (2") rebar was utilized but to prevent any cracking and to further reinforce the blocks, the engineer requested the use of macro-synthetic fibers. A dosage rate of 2.5 kg/m³ (4.2 pcy) of TUF-STRAND™ SF macro-synthetic fiber was determined by the engineer with consultation from the fiber supplier, Euclid Chemical. With the extreme change in terrain and logistical difficulties of moving concrete up the mountainside, a helicopter was used to deliver the FRC mix over the course of several days to pour the thrust blocks. The TUF-STRAND SF mix allowed for cost savings, more durable concrete and demonstrated a solid working relationship with the Ready-Mix Producer, owner and material supplier for a challenging project.