



CASE STUDY

REINLAND DRAIN

Channel Stabilization
Winkler, Manitoba



PROJECT SUMMARY

The Reinland Drain is a municipal drainage channel in Manitoba that receives flows from the entire Pembina Valley. The channel's sandy, silty clay soil could not handle flow from a 100-year storm event. Years of erosion, combined with damage from significant flooding, caused major failures to three kilometers of the channel. The town needed to stabilize the eroded channel banks to prevent further flooding and shoreline loss.

Due to wet weather, the construction schedule was delayed until winter months. This delay caused two major challenges. First, the damp soil froze creating a three-foot thick section of frozen ground. Second, the project had to be completed before the spring run-off began in March, which drastically shortened the allotted construction schedule.

Rip rap had previously been used in the channel, but failed during rain events. Plus, the closest quarry was 90 minutes away. Transporting the amount of needed rock would add considerable time and cost. ARMORMAX was selected because it cost significantly less to ship, while outperforming hard armoring solutions. One truckload of 20,000 square yards of ARMORMAX is equivalent to 667 truckloads (6,667 cubic yards) of rock riprap. This cut transportation costs and lowered the carbon emissions by 90 percent.

PROBLEM

Years of erosion, combined with damage from significant flooding, caused major failures to the Reinland Drain



SOLUTION

Approximately 38,000 m² of ARMORMAX was installed in one month



ARMORMAX[®]

Engineered Earth Armoring System

PropexGlobal.com/Armormax

FEATURES & BENEFITS

- Provides permanent erosion protection for up to 75 years
- Withstands both hydraulic and non-hydraulic stresses
- Ease of installation reduces time and labor costs
- Reinforces vegetation and promotes a living shoreline
- Outlasts other slope reinforcement methods yielding significant cost savings
- Promotes infiltration of surface water
- Available in green or tan to fit specific project needs
- Lightweight and easily transported into areas with access challenges

To overcome the challenge presented by the frozen ground, the engineer used choose a larger pin that was within the acceptable specification range.

Additionally, ARMORMAX was selected because it met the hydraulic performance requirements, is proven to provide up to 75 years of design life, and is engineered to promote vegetation.

Tom Crilly, the project engineer, was impressed by the ease of installation and said, "ARMORMAX is a very useful product for erosion control where more standard erosion control measures are difficult to obtain or expensive." Approximately 38,000 m² of ARMORMAX was installed, providing the Reinland community with resilient flood protection infrastructure for generations to come. Within six months the channel was fully vegetated.



PERFORMANCE

The ARMORMAX stabilized channel has successfully withstood multiple flood events and is fully vegetated



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Visit our website for more information, Product Samples, or other inquiries, or call Customer Service at 800 624 1273

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PGS-1218E-004 (04/2020)