
APPENDIX C

COSTS FOR CLOSURE METHODS

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Cost Assumptions

Relative costs are provided below for each of the closure methods detailed in the handbook. Costs are budget estimates based on conditions typical to Nova Scotia. Actual costs will vary with the accessibility of the site, availability of materials and size, condition and location of the abandoned mine opening. This cost information should be used only as a guide to expected costs, and a detailed cost estimate should be obtained prior to actual installation, fabrication and/or construction of a closure method.

The assumptions used in the cost estimates provided in the following table include:

- shafts and other near vertical openings average 2.4 m by 3 m in size and a maximum of 100 m in depth.
- adits and other near horizontal openings average 1.8 m by 2.4 m in size and are accessible for the first 5 to 10 m.
- a nominal amount of overburden and rock removal is required to reach competent bedrock or a concrete shaft collar.
- the abandoned mine openings are vehicle accessible
- all work to fabricate, construct and install the mine closure method is conducted by contractors with the exception of signs.

The costs provided in the following table should be increased as it becomes more difficult to reach the abandoned mine opening. If vehicle access is not possible, certain methods, including concrete capping, concrete block bulkheads and backfilling may not be feasible. Costs will also increase if the size of the opening exceeds the size used for the cost estimate assumptions.

Costs include materials and labour, but do not include any engineering or design expense associated with the mine closure method.

CLOSURE METHODS COST ESTIMATE TABLE

Closure Type	Application	Relative Cost	Limitation and Notes
Signs	Vertical and Horizontal Openings	\$5 to \$25 per sign	Cost will vary with size and type of post used.
Fencing (Chain Link)	Vertical and Horizontal Openings	\$100 to \$200 per metre	Costs will increase if it is necessary to install posts in rock
Steel Wire Screening	Vertical and Near Vertical Openings	\$400 to \$800 per opening	Costs will vary with the amount of overburden and/or rock requiring removal to reach competent bedrock or a concrete shaft collar.
	Horizontal and Near Horizontal Openings	\$400 to \$800 per opening	May be a requirement to enter mine opening to install screen.
Steel Grating	Vertical and Near Vertical Openings	\$500 to \$2,000 per opening	Costs will vary with the amount of overburden and/or rock requiring removal to reach competent bedrock or a concrete shaft collar.
	Horizontal and Near Horizontal Openings	\$500 to \$2,500 per opening	May be a requirement to enter mine opening to install steel grating.
Bulkhead Closure	Native Rock	\$500 to \$1,500 per opening	Sufficient quantity of broken native rock required.
	Concrete Block	\$800 to \$2,200 per opening	Requirement to transport concrete blocks to abandoned mine opening site.
Concrete Cap	Pre-Cast Panels	\$1,500 to \$4,000 per opening	Costs will vary with accessibility, amount of excavation required to reach competent bedrock and size of opening.
	Cast-In-Place	\$1,800 to \$5,000 per opening	
	Monolithic Cap	\$1,500 to \$3,500 per opening	
Blast Closure	Horizontal or Near Horizontal Openings	\$800 to \$4,000 per opening	Costs will vary with size of opening and ability to enter opening for drilling.
Backfill	Vertical or Near Vertical Opening	\$600 to \$4,500 per opening	Costs will vary with depth and size of opening and availability of fill.
	Horizontal or Near Horizontal Opening	\$700 to \$5,000 per opening	Costs will vary with size of opening and availability of fill.



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