

**Concrete gravity wall**

A gravity wall is shown in the figure below. The wall is 10 m high and 1 m thick. The backfill is sand with a unit weight of 18 kN/m<sup>3</sup> and a friction angle of 30°. The wall is subjected to a horizontal force of 100 kN/m at the top.

Calculate the total active earth pressure on the wall in kN/m.

1. What is the effect of the force on the active earth pressure on the wall?

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2. Draw the active earth pressure diagram in the space provided below.

