These joint failures were the direct cause necessitating replacement of the entire exterior wall.

**Sealant Materials**

Exterior sealants are normally an elastomeric type. This means that the sealant material will withstand joint compression and extension due to thermal expansion and contraction of the adjacent materials. When air temperatures change the envelope materials expand or contract. Sealant joints compress or extend to compensate for the building envelope materials' movement.

ASTM C920 rates sealants by their ability to withstand movement expressed as a percent of the joint width. All elastomeric sealants will meet Class 25, meaning they will withstand 25% extension and 25% compression. Many sealants meet Class 100/50 meaning they will...
Joint Depth $D = 0.50 \times W$

Usually the maximum joint depth is 1/2 inch for silicone sealants and 3/4 inch for polyurethane sealants.

## Conclusions

Calculate the size and spacing so building envelope joints will accommodate the expected thermal movement. Select joint sealants with movement capability matching the joint requirements. Conduct preconstruction testing to ensure the correct primer is selected and that sealant will adhere to the substrate. Inspect joints periodically to ensure proper, continuous performance.

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