CFD simulation of Water Weep system for fenestration industry

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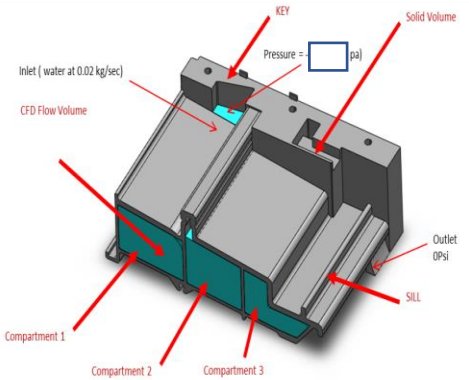
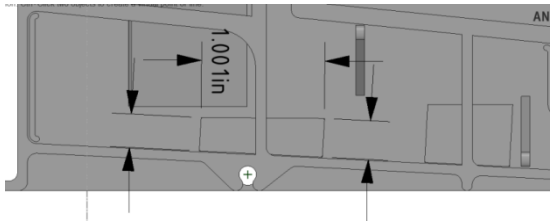
CFD analysis of Water Weep system:

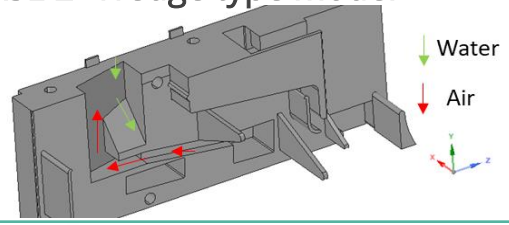
- A standard test where a vacuum pressure(6 psf) is applied at inlet and fluid (water) is made to pass through the system and to ensure that water does not remain stagnant in the system.
- Different Design Iterations are run to ensure best flow rate is achieved.
- 3D printing of the models are done and tested, compared with the CFD results.



CASE 1: Height increased by 20% model

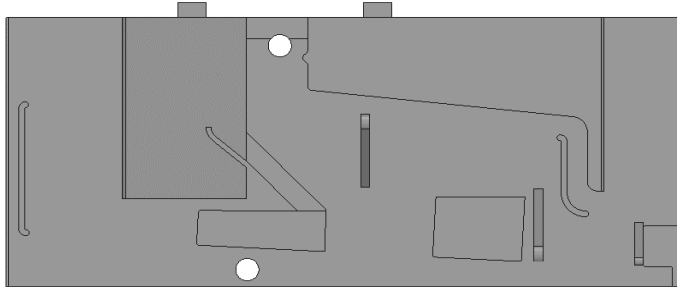


CASE 2- Wedge type model

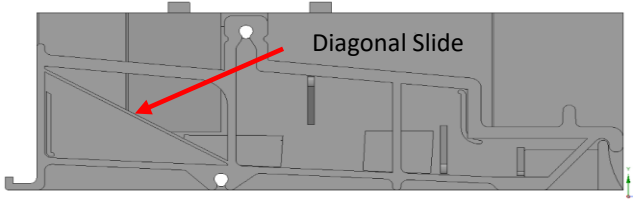


KEY & SILL GEOMETRY VARIATIONS

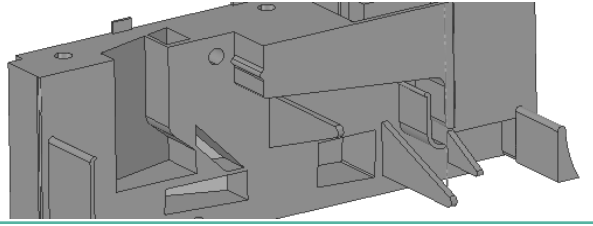
CASE 3- Baffle Plate model



CASE 4- Diagonal slide model



CASE 5- Inlet divided model



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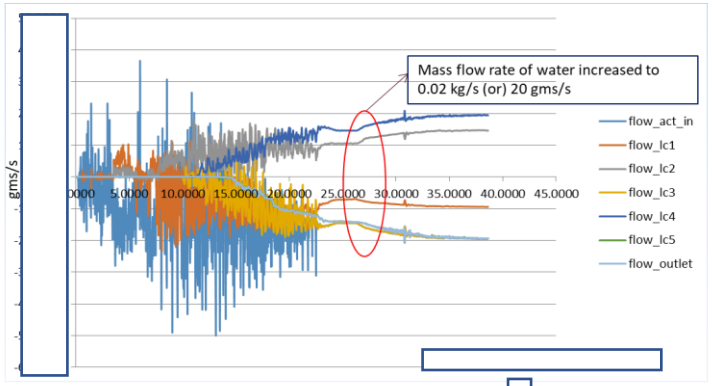
CFD analysis of the Water Weep system

Benefits:

59% increase in flow rate (from ***gms/sec to ***gms/sec) was achieved by means of the suggested modification of a baffle plate model.



Steady state flow rate across the system = 0.019 kg/s (or) 19.4 g/s

Steady state flow rate achieved at 37 s