

# PROPER SUBFLOOR DEFLECTION WHEN SETTING NATURAL STONE

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This technical bulletin addresses the concern of the recommendation for subfloor rigidity designed to accommodate weaker stones. At this time, building codes recommend that deflection should not exceed L/360 or slightly less than 1/2" (13 mm) (+/-) in 15 feet (4.6 M). The code does not make allowances for tile types, nor does it specify different deflection requirements for stone.

Due to the changes in the construction industry where subfloors with 19.2" (48.7 cm) o.c. joists and 24" (61 cm) o.c. truss systems with deflections greater than L/360 have become common, the Marble Institute of America (MIA) has made a recommendation for a more rigid subfloor when setting certain stones. These stones can include soft stone such as marble and travertine, stone larger than 12" x 12" (30 x 30 cm), stone with heavy veining or voids, or thin stone less than 3/4" (19 mm) thick. These stones are more prone to cracking or disbonding due to their fragile nature; this is where subfloor rigidity becomes critical. MIA has recommended subfloor deflection not to exceed L/720 including all live and dead loads [slightly less than 1/4" (6 mm) (+/-) of deflection in 15 feet (4.6 M)].

Fundamentally, Custom® Building Products has no objection to the MIA or specific stone manufacturers or distributors' requirement for a more rigid substrate to protect more fragile stone from disbonding or cracking. Where culpability for failure enters the discussion, it should be noted that it is not the responsibility of the mortar manufacturer to mandate requirements outside those that are already recognized and accepted.

CUSTOM® manufactures a number of products that will effectively bond a wide variety of stones to acceptable substrates. It is the stone manufacturer and/or distributor, however, that must provide direction or warnings that would allow the purchasing party to take the necessary steps to properly engineer a floor receiving this type of fragile stone. Should failure occur due to lack of information or improper subfloor preparation, CUSTOM® will not accept responsibility for product failure.

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