

A \_ RctYZWTe UVdX\_d R Sf ZUI  
Z\_Xh ZY eYVVi aVtReZ\_ eYRe  
R] eYV ~``cd h Z] SV ]VgV  
R\_U eYReR] eYVhR]dh Z] SV  
ajf ^ SZ E ]VcR\_TVd `WT\_!  
dcf TcZ\_ a]Rj R\_ Z` a`cR\_e c` ]VZ\_ ac`!  
Uf TZ\_X R bf R]Zj ac` Uf Te eYRe TR\_ YVja  
^ WeeY` dVVi aVtReZ\_ dZ

EYV VdRS]ZV^ V\_e `WeVbf ZVU e ]Vd  
R\_TVdTR\_SVT ^ VT ^ a]M\_LR\_U ^ Rj SV  
VdVtR]j TeZIR] Z\_ eYVVi dCZ ch R]d` W  
^ f]eZ`de`gj dcf Tef cVd h YcV eYV T]RU  
UZ\_X ^ f de SV ReR]YVU e` R dcf Tef cR]  
WR^ VZDX\_Z TR\_e UVgZcZ\_d `WeYVgVd  
eZIR]Zj `WeYReWR^ VZV`eRTT f\_eUWc  
Z\_ ac` aVc a` dZ\_Z\_X `WeYVWR^ V\_R\_U  
RU]f de` V\_ed `WeYVT \_\_ VtZ\_dL^ Rj SV  
cV-VtU Z\_ eYV Sf ZUZ\_Xd }\_ZVU RaI  
aVcR\_TVZ\_VR~``cZdX\_Z TR\_ej `fe`W  
]VgV]eYZ]cV-VtSRU]j ` \_ eYVbf R]Zj `W  
eYVT \_ dcf TcU

Floor Flatness (FF) and Floor Levelness (FL) are terms used in many project specifications and given quantifying values as a level of performance that the contractor is expected to meet. This system of measurement is described in ASTM Standard E1155.

There are often misconceptions about the meaning of the FF and FL terms and about what the system is intended to do. Many design and construction professionals relate this system to a measurement of the expected final floor elevation. In actuality, the FF/FL system is a measure of the resulting floor finish in terms of the required flatness and levelness produced by the concrete setting and finishing processes. **It is not intended to be a measure of the structural performance of the floor system.** The measurements are to be taken at the completion of the concrete finishing operations, with shoring still in place.

The FF/FL system of evaluation is not appropriate for framed floors that can deflect as the weight of the concrete is applied. The measurement system is applied to evaluate the slab finishing techniques in some cases of metal deck and concrete fill systems. However, when this is done, a non-uniform slab thickness must be assumed in the design to account for the deflected shape of the structural system, and the placement of the concrete must be coordinated to achieve a level floor. The measurement system can be, and often is, used

in framed floors that are rigidly shored during construction as a measure of the floor finishing techniques. However after the shores are removed and the framing system deflects, the previous FF/FL measurements become irrelevant in terms of the floor elevation. Therefore, don't expect that specifying stringent FF/FL requirements will assure a level framed floor in the final structure.

Once the myth of the FF and FL expectation is dispelled, the design team can get down to the job of assessing the tolerance requirements for the structural steel portion of the building system. As previously stated, the AISC COSP is a standard widely used in the steel construction industry as a method of judging the acceptability of structural steel framework. This document is often incorporated in project specifications as part of the contract documents issued by the project design professional.

If the design professional requires tolerances other than those stated in the COSP, this information is to be stipulated in the contract documents. However, it is unrealistic to expect the contractor to achieve unrealistic goals by stipulating requirements that are out of the realm of their control. Specifying that floors be level or in a ga

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