

An often overlooked hidden
requirement:

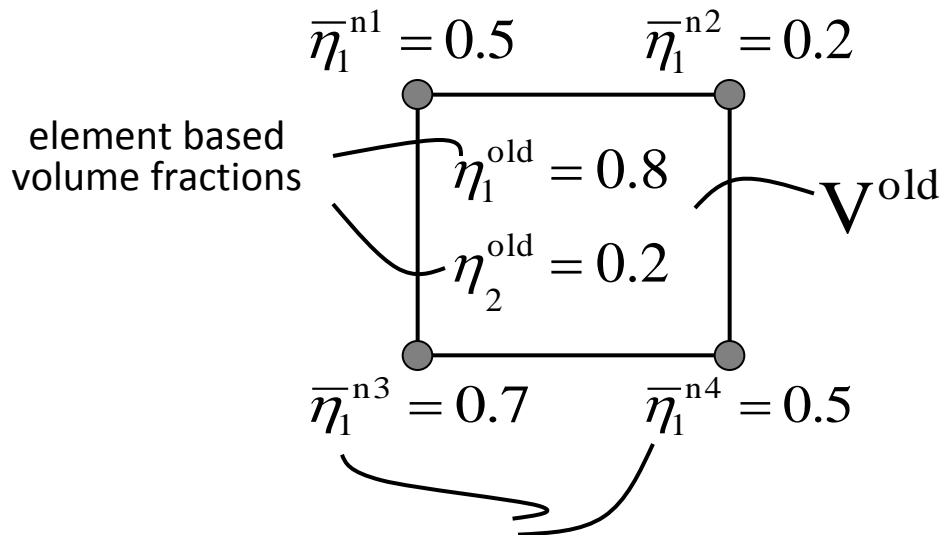
Neighboring materials must be listed
next to each other in
in `*ALE_MULTI-MATERIAL_GROUP`

Interface Reconstruction

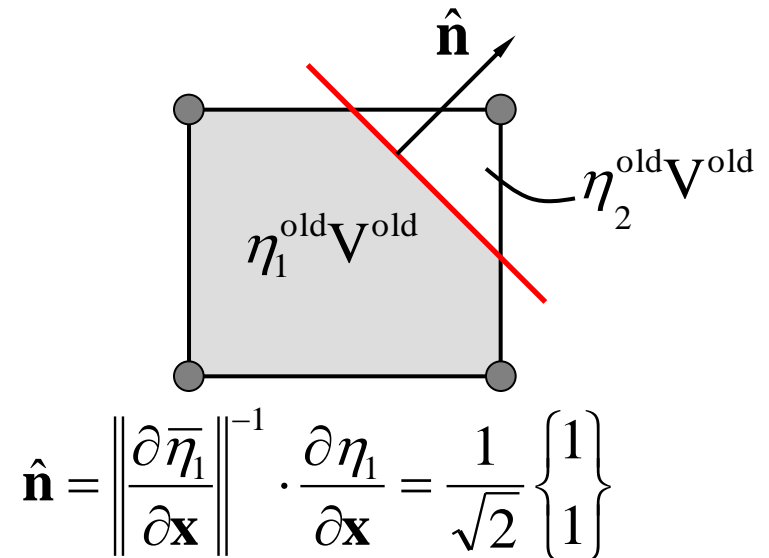
With the interface reconstruction, mixed elements are cut with a plane, separating the location of the different materials. The plane orientation is based on the gradient of the volume fraction field.

example with two materials

element before mesh smoothing



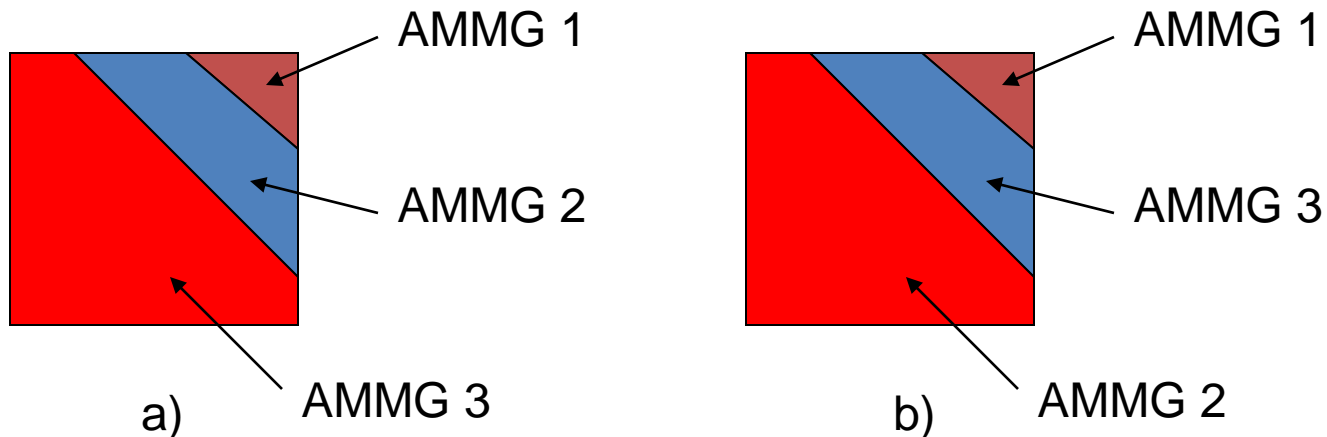
assumed distribution of materials



Interface Reconstruction

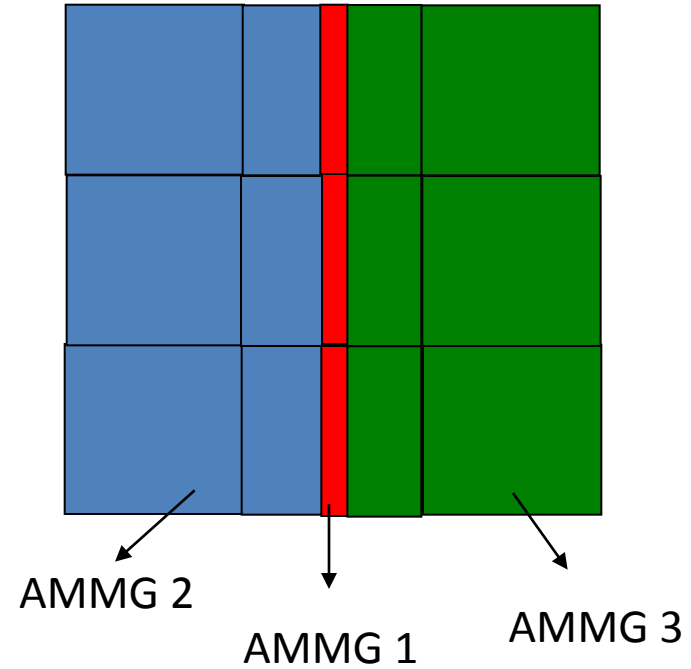
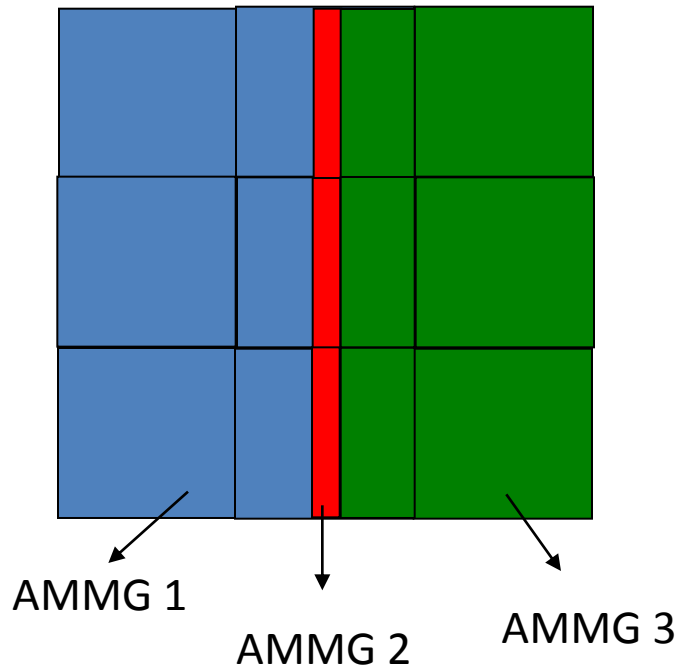
LS-DYNA ALE interface reconstruction for each AMMG

1. Element volume fraction \rightarrow Nodal volume fraction
2. Gradient of nodal volume fraction \rightarrow interface normal
3. Move the cut interface until the volume cut is equal to the element volume fraction
4. The process repeats for each AMMG in the order it is defined in the `*ALE_MULTI-MATERIAL_GROUP`



The above shows two different setup for `*ALE_MULTI-MATERIAL_GROUP`. Which one is right? Why?

Interface Reconstruction



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