CLAIMS

1. A building construction having a curtain wall construction defined by an interior wall surface including one or more framing members and at least one floor spatially disposed from the interior wall surface of the curtain wall construction defining the safing slot extending between the interior wall surface of the curtain wall construction and an outer edge of the floor, comprising:

a thermally insulating and sealing system for effectively thermally insulating and sealing of the safing slot, comprising:

i) a first element comprised of a thermally resistant material for insulating positioned in the safing slot, wherein the first element includes:

a) an inner primary end surface positionable in abutment with respect to the outer edge of the floor for sealing thereadjacent,

b) an outer primary end surface positionable spatially disposed from the interior wall surface of the curtain wall construction,

c) a lower primary facing surface extending between the inner primary end surface and the outer primary end surface and facing downwardly therebetween,

ii) a second element comprised of a non-combustible material for receiving the first element positioned substantially in the safing slot in abutment with respect to the bottom of the floor and essentially spatially disposed from the interior wall surface of the curtain wall construction, wherein the second element includes:

a) a web section having opposing edges;

b) a pair of outwardly extending sidewalls integrally connected to the web section, wherein each sidewall has a proximal end and a distal end, wherein the proximal end of each sidewall is integrally connected to one of the opposing edges of the web section, and wherein the sidewalls are substantially parallel and confront each other; and

c) optionally one laterally extending ledge section integrally connected to one of the pair of outwardly extending sidewalls, wherein the ledge section has an inner edge and an outer edge, and wherein the inner edge of the ledge section is integrally connected to the distal end of one of the pair of sidewalls, and

iii) a supplemental attachment element for attaching of the second element with respect to the bottom of the floor, wherein the second element is attached, using the supplemental attachment element, to the bottom of the floor and to an interior horizontal framing member of the curtain wall construction,

and further

iv) a third element comprised of a thermally resistant material for insulating positioned in the safing slot in abutment with respect to the outer primary end surface of the first element and in abutment to the interior of the web section of the second element and partially to the inner facing surfaces of the outwardly extending sidewalls of the second element,

v) a connecting framing element of a non-combustible material, positioned between the second element and the bottom of the floor in front of a vertical framing member,

vi) an additional element comprised of a thermally resistant material for insulating positioned in the safing slot in abutment with respect to the lower facing surface of the first element and to the upper facing surface of one of the outwardly extending sidewalls of the second element, and

vii) an outer fire retardant coating positioned across the first element and the adjacent portions of the interior framing member of the curtain wall construction and the floor located thereadjacent.

2. The building construction according to claim 1, wherein the second element of the thermally insulating and sealing system is positioned spatially disposed from the interior wall surface of the curtain wall construction and spatially disposed from the lower facing surface of the first element of the thermally insulating and sealing system, and extends across the safing slot toward the outer edge of the floor thereadjacent.

3. The building construction according to claim 1, wherein the second element of the thermally insulating and sealing system is comprised of a metal material.

4. The building construction according to claim 3, wherein the metal material is steel.

5. The building construction according to claim 1, wherein the first element and the third element each comprise a thermally resistant flexible material to facilitate placement thereof into the safing slot adjacent one another.

6. The building construction according to claim 1, wherein the first element and the third element each comprise a thermally resistant flexible mineral wool material to facilitate placement thereof into the safing slot adjacent one another.

7. The building construction according to claim 6, wherein the thermally resistant flexible mineral wool material is installed with fibers running parallel to the outer edge of the floor and the interior web section of the second element.

8. The building construction according to claim 1, wherein the connecting framing element is comprised of a metal material.

9. The building construction according to claim 8, wherein the metal material is steel.

10. The building construction according to claim 1, wherein the additional element comprises a thermally resistant flexible material to facilitate placement thereof into the safing slot.

11. The building construction according to claim 1, wherein the supplemental attachment element of the thermally insulating and sealing system comprises a structural fastening element, wherein the structural fastening element is a pin, an expansion anchor, screw anchor, bolt, or adhesion anchor, and wherein the structural fastening element extends through the second element and is attached to the bottom of the floor and to the interior horizontal framing member of the curtain wall construction.

12. The building construction according to claim 1, wherein the outer fire retardant coating covers the top of the thermally resistant flexible mineral wool material overlapping the outer edge of the floor and the interior face of the interior framing member surface of the curtain wall construction by a min. of 1/2 inch.

13. The building construction according to claim 1 or 12, wherein the outer fire retardant coating is a water-based or silicone-based outer fire retardant coating in the form of an emulsion, spray, coating, foam, paint or mastic.

14. The building construction according to claim 1, wherein the curtain wall construction is comprised of a vision glass infill and one or more metal framing members.