

Claims

WHAT IS CLAIMED IS:

1. A metal deck comprising:
a plurality of deck components formed in a contiguous metal sheet, one or more of the deck components formed along a width of the metal deck and including an elevated section and a ribbed section, the elevated section configured to provide sound insulation between the metal deck and a truss structure, the ribbed section including a rib flute extending from a bottom surface of the metal deck, the ribbed section further including a first elevated rib positioned adjacent to a first side of the rib flute and a second elevated rib positioned adjacent to a second side of the rib flute, the first elevated rib and the second elevated rib being substantially parallel to the rib flute, the ribbed section including the rib flute, the first elevated rib, and the second elevated rib extending along a length of the metal deck.
2. The metal deck of claim 1 wherein each of the rib flutes of the plurality of deck components includes sides that are formed perpendicular to the bottom surface of the metal deck.
3. The metal deck of claim 1 wherein each of the rib flutes are dovetail shaped ribs.
4. The metal deck of claim 1 wherein the ribbed section further includes a first rib trough positioned adjacent to the first elevated rib and a second rib trough positioned adjacent to the second elevated rib, the first rib trough and the second rib trough being substantially parallel to the rib flute.
5. The metal deck of claim 1 wherein the elevated section further includes a plurality of protrusions positioned along the length of the elevated section, the plurality of protrusions providing traction control for the elevated section.

6. The metal deck of claim 1 wherein a thickness of the contiguous metal sheet is between 12-18 gauge.

7. The metal deck of claim 1 wherein each of the rib flutes includes one or more rib openings for receiving portions of the truss structure such that the metal deck may be fixably positioned on top of the truss structure.

8. The metal deck of claim 1 further comprising:
a first edge extending the length of the metal deck, the first edge including an elevated flange; and
a second edge extending the length of the metal deck, the first edge including a flat flange, the first edge and the second edge for positioning the metal deck to one or more additional metal decks in an overlapping configuration.

9. The metal deck of claim 1 wherein one or more cutouts are positioned in one or more edges of the metal deck, the one or more cutouts configured to receive one or more structural posts of a building.

10. The metal deck of claim 1 wherein the elevated section is positioned between two rib troughs, the two rib troughs providing support for the elevated section.

11. A structural system, comprising:
two or more trusses positioned parallel to each other; and
a metal deck positioned on the two or more trusses and including a plurality of deck components formed in a contiguous metal sheet, one or more of the deck components formed along a width of the metal deck and including an elevated section and a ribbed section, the elevated section configured to provide sound insulation between the metal deck and the two or more trusses, the ribbed section including a rib flute extending from a bottom surface of the metal deck, the ribbed section further including a first elevated rib positioned adjacent to a first side of the rib flute and a second elevated rib positioned adjacent to a second side of the rib flute, the first elevated rib and the second elevated rib being substantially parallel to the rib flute, the ribbed section including the rib flute, the first elevated rib, and the second elevated rib extending along a length of the metal deck.

12. The structural system of claim 11 wherein each of the rib flutes includes at least two rib openings, each of the at least two rib openings configured to receive the two or more trusses such that the metal deck is fixably positioned on the two or more trusses.

13. The structural system of claim 11 wherein each of the rib flutes of the plurality of deck components includes sides that are formed perpendicular to the bottom surface of the metal deck.

14. The structural system of claim 11 wherein each of the rib flutes of the plurality of deck components is a dovetailed shaped rib.

15. The structural system of claim 11 wherein the ribbed section further includes a first rib trough positioned adjacent to the first elevated rib and a second rib trough positioned adjacent to the second elevated rib, the first rib trough and the second rib trough being substantially parallel to the rib flute.

16. The structural system of claim 11 wherein the elevated section further includes a plurality of protrusions positioned along the length of the elevated section, the plurality of protrusions providing traction control for the elevated section.

17. The structural system of claim 11 wherein the metal deck further comprises:

a first edge extending the length of the metal deck, the first edge including an elevated flange; and

a second edge extending the length of the metal deck, the first edge including a flat flange, the first edge and the second edge for positioning the metal deck to one or more additional metal decks in an overlapping configuration.

18. The structural system of claim 11 wherein the metal deck includes one or more cutouts are positioned in one or more edges of the metal deck, the one or more cutouts configured to receive one or more structural posts of a building.

19. The structural system of claim 11 wherein the each of the rib flutes are positioned substantially perpendicular to the two or more trusses.

20. The structural system of claim 11 wherein the elevated section is positioned between two rib troughs, the two rib troughs providing support for the elevated section.