

WE CLAIM:

1. A mould set for fabrication of an EPS pallet, comprising:
 - a modular platform mould (70) configured to act as a mould for a platform
 - 5 section of the EPS pallet, wherein the modular platform mould comprises:
 - a bottom plate (80) of a pre-defined dimension;
 - a top plate (100) of a pre-defined dimension configured to fit on top of the bottom plate (80) while forming a hollow space (90), corresponding to dimension of the platform section of the EPS pallet, between the top plate
 - 10 (100) and the bottom plate (80), wherein the hollow space (90) is configured to receive feed of polystyrene beads;
 - a modularity unit configured to alter dimension of the hollow space, wherein the modularity unit comprises
 - a first elongated panel (110a) comprising a plurality of first
 - 15 segments (120a), wherein the first elongated panel (110a) is oriented lengthwise on a first side of the bottom plate (80) and housed in the hollow space (90), wherein each of the plurality of first segments is configured to be independently operated laterally to move from a first position to a second position, thereby altering length of the hollow
 - 20 space (90); and
 - a second elongated panel (110b) comprising one or more second segments (120b), wherein the second elongated panel (110b) is oriented breadthwise on a second side of the bottom plate (80) housed in the hollow space (90), wherein each of the one or more second
 - 25 segments (120b) is configured to be independently operated laterally to move from a first position to a second position, thereby altering breadth of the hollow space.
2. The mould set for fabrication of an EPS pallet as claimed in claim 1, wherein the a bottom plate comprises first set of a plurality of openings configured to

receive feed of polystyrene beads and guide the polystyrene beads into the hollow space (90) to form the platform section of the EPS pallet.

3. The mould set for fabrication of an EPS pallet as claimed in claim 2, wherein one or more opening of the first set of a plurality of openings are configured to be activated when positioned to guide the feed of polystyrene beads to an altered dimension of the hollow space.
4. The mould set for fabrication of an EPS pallet as claimed in claim 1, wherein the bottom plate comprises a second set of plurality of openings configured to enable inlet and outlet of at least one of air, water and steam.
5. The mould set for fabrication of an EPS pallet as claimed in claim 1, wherein the top plate comprises a third set of plurality of openings configured to enable inlet and outlet of at least one of air, water and steam.
6. The mould set for fabrication of an EPS pallet as claimed in claim 1, wherein each segment of the plurality of first segments (120a) is configured to be independently operated laterally to move from the first position to the second position via a corresponding first set of levers (130a), wherein one or more levers of the first set of levers are mounted with respect to the corresponding plurality of first segments (120a) and configured to push or pull each segment of the plurality of first segments (120a).
7. The mould set for fabrication of an EPS pallet as claimed in claim 1, wherein each of the one or more second segments (120b) are configured to be operated in the elongated direction along the second side within the hollow space (90) independently via a corresponding second set levers (130b), where one or more lever of the second set levers (130b) are mounted with respect to corresponding one or more second segments (120b) and configured to push or pull each of the one or more second segments (120b) to obtain a desired dimension of the hollow space.
8. The mould set for fabrication of an EPS pallet of claim 1, wherein the mould set further comprises a leg mould (70) configured to act as mould to fabricate

a plurality of leg support sections corresponding to the platform section of the EPS pallet, wherein the leg mould comprises:

5 a bottom layer (150) comprising a plurality of inlets for at least one of air, water and steam, one or more drain outlets, and one or more openings to receive feed of polystyrene beads;

a mid layer (160) comprising a plurality of hollow cavities of a pre-defined dimensions, wherein bottom side of the mid layer (160) configured fit over top side of the bottom layer (150),

10 a top layer (190) comprising a plurality of inlets for at least one of air, water and steam and one or more drain outlets, and configured to fit on top side of the mid layer (160) while sealing the plurality of hollow cavities of the mid layer,

15 wherein sealed plurality of hollow cavities being configured to receive feed of the polystyrene beads via the one or more openings of the bottom layer (150) and shape the plurality of leg support sections.

9. The mould set for fabrication of an EPS pallet of claim 8, wherein the leg mould further comprises one or more rings configured to fit inside the plurality of the hollow cavities and thereby alter dimension of the plurality of the hollow cavities for fabricating the plurality of leg support sections of the altered dimension.

20 10. A process (300) for making a mould set for fabrication of an EPS pallet comprising:

drawing a plurality of patterns for base of one of a modular platform mould (70) and a leg mould (200), wherein the pattern comprises plurality of rib points, plurality of feeding points and a steam jet spacing;

25 fabricating each of the plurality of patterns independently using one of wood or expandable polystyrene (EPS);

casting each of the plurality of fabricated patterns;

polishing a plurality of casted patterns using buffing process; and

combining one or more casted patterns of a plurality of polished patterns for obtaining one of the modular platform mould (70) and the leg mould (200).

11. A process (400) for fabricating an EPS pallet comprising:

5 mixing polystyrene beads with at least one of one or more antifungal components and one or more fire retardants for preforming of the polystyrene beads;

heating preformed polystyrene beads, placed in a mesh, for a pre-defined duration and a pre-defined temperature in order to season preformed polystyrene beads;

10 transferring seasoned polystyrene beads into one of a modular platform mould (70) and a leg mould (200);

moulding the seasoned polystyrene beads filled inside the modular platform mould (70) and the leg mould (200) to yield a platform section of the EPS pallet and leg support section of the EPS pallet, respectively;

15 stabilising the at least one antifungal component and fire retardants present in moulded platform section and moulded leg support section by drying at a pre-set temperature and duration;

dedusting a dried platform section and leg support section through a dedusting chamber; and

20 affixing one or more leg support sections to bottom side of the platform section at predefined locations to form the EPS pallet.

12. The process for making an EPS pallet of claim 11, wherein the pre-defined temperature for heating preformed polystyrene beads comprises 45 °C

13. The process for making an EPS pallet of claim 11, wherein the pre-defined
25 duration for heating preformed polystyrene beads comprises 3 hours.

14. The process for making an EPS pallet of claim 11, wherein the pre-set temperature for drying comprises 45 °C.

15. The process for making an EPS pallet of claim 11, wherein the pre-set duration for drying comprises 2 to 4 hours.

16. The process for making an EPS pallet of claim 11, wherein the predefined locations for affixing the one or more leg support sections to the platform section
5 is determined based on weight bearing capacity and position of lifting the EPS pallet.