CLAIMS

1. A drier for drying a board, the board having two principal surfaces that are opposed to each other, the drier comprising:

rollers for conveying the board along a longitudinal direction of the drier, the rollers further being for supporting the board in a support plane containing the longitudinal direction of the drier;

air inflow means for directing airflow towards the principal surfaces of the board, the air inflow means comprising a lower conduit and a upper conduit, the lower and upper conduits each having a substantially rectangular cross-section and each extending transversely to the longitudinal direction of the drier, the lower conduit having a plurality of apertures for directing airflow towards an underside of the board and the upper conduit having a plurality of apertures for directing airflow towards an upper side of the board;

wherein the combined cross-sectional area of the upper and lower conduits at their respective airflow inlets is at least 40% of the unit area of the drier, the unit area being a quadrilateral having:

one side equal to the distance between the axis of the roller immediately preceding the lower conduit, in the direction of travel of the board, and the axis of the roller immediately following the lower conduit, in the direction of travel of the board; and

another side equal to the distance between the uppermost portion of the upper conduit and the lowermost portion of the lower conduit;

and further wherein the width of the lower conduit in the longitudinal direction of the drier is less than the width of the upper conduit in the longitudinal direction of the drier.

2. A drier according to claim 1, wherein said lower and upper conduits each have a planar face facing towards the support plane, the plurality of apertures associated

with each respective conduit being provided in the respective planar face of that conduit,

the planar face of the lower conduit being narrower than the planar face of the upper conduit.

3. A drier according to claim 1 or claim 2, wherein the cross-sectional area of the lower and upper conduits at a given distance along the transverse direction of the drier is the same.

4. A drier according to claim 3, wherein the width of the lower conduit in the longitudinal direction of the drier is less than 90% of the width of the upper conduit in the longitudinal direction of the drier.

5. A drier according to any one of the preceding claims, further comprising a panel that is aligned with the longitudinal direction of the drier and intersects the support plane, the panel being for enhancing airflow in the longitudinal direction of the drier.

6. A drier according to claim 5, wherein the panel is provided at the downstream end of the conduits, relative to the direction of airflow along the conduits.

7. A drier according to any one of the preceding claims, wherein the cross-sectional area of at least one of the lower and upper conduits decreases in a transverse direction of the drier.

8. A drier according to claim 7, wherein at least one of the lower and upper conduits has a cross section that decreases continuously in a transverse direction of the drier, for at least part of the length of the at least one conduit.

9. A drier according to any one of the preceding claims, wherein at least 90% of the plurality of apertures provided in the lower conduit are distributed within two bands extending along the length of the conduit, the bands being provided in the lateral portion of the conduit and being separated by a central strip comprising at least 55% of the width of the conduit.

10. A drying system comprising a drier according to any one of the preceding claims, the system being configured such that the airflow directed by the air inflow means is heated using thermal energy recovered from an exhaust conduit provided within the system.

11. A drying system according to claim 10, the system comprising a heat pump for transferring thermal energy from the exhaust to the air inflow means.

12. A system according to claim 10 or claim 11, wherein the exhaust conduit provides an outlet for steam generated by a drying chamber located up-stream or downstream of said drier.

13. A drier for drying a board, the board having two principal surfaces that are opposed to each other, the drier comprising:

conveying means for conveying the board along a longitudinal direction of the drier, the conveying means further being for supporting the board in a support plane containing the longitudinal direction of the drier;

air inflow means for directing airflow towards at least one of the principal surfaces of the board; and

airflow control means comprising a panel that is aligned with the longitudinal direction of the drier and intersects the support plane, the panel being for enhancing airflow in the longitudinal direction of the drier.

14. A drier according to claim 13, wherein the air inflow means comprises a conduit extending transversely to the longitudinal direction of the board, the conduit comprising a plurality of apertures for directing airflow towards the board,

wherein the cross-sectional area of the conduit decreases in a downstream direction of the conduit.

15. A drier according to claim 13, wherein the air inflow means comprises a conduit extending transversely to the longitudinal direction of the board, the conduit comprising a plurality of apertures for directing airflow towards the board,

wherein the panel is located at the downstream end of the conduit, relative to the direction of airflow along the conduit.

16. A drier for drying a board, the board having two principal surfaces that are opposed to each other, the drier comprising:

conveying means for conveying the board along a longitudinal direction of the drier, the conveying means further being for supporting the board in a support plane containing the longitudinal direction of the drier; and

air inflow means for directing airflow towards at least an underside of the board, the air inflow means comprising a conduit extending transversely to the longitudinal direction of the board, the conduit comprising a plurality of apertures for directing airflow towards the underside of the board;

wherein at least 90% of the apertures are distributed within two bands extending along the length of the conduit, the bands being provided in the lateral portions of the conduit and being separated by a central strip comprising at least 55% of the width of the conduit, and further wherein a plurality of apertures is located within each band.

CLAIMS

1. A drier for drying a board, the board having two principal surfaces that are opposed to each other, the drier comprising:

rollers for conveying the board along a longitudinal direction of the drier, the rollers further being for supporting the board in a support plane containing the longitudinal direction of the drier;

air inflow means for directing airflow towards the principal surfaces of the board, the air inflow means comprising a lower conduit and a upper conduit, the lower and upper conduits each having a substantially rectangular cross-section and each extending transversely to the longitudinal direction of the drier, the lower conduit having a plurality of apertures for directing airflow towards an underside of the board and the upper conduit having a plurality of apertures for directing airflow towards an upper side of the board;

in which the combined cross-sectional area of the upper and lower conduits at their respective airflow inlets is at least 40% of the unit area of the drier, the unit area being a quadrilateral having:

one side equal to the distance between the axis of the roller immediately preceding the lower conduit, in the direction of travel of the board, and the axis of the roller immediately following the lower conduit, in the direction of travel of the board; and

another side equal to the distance between the uppermost portion of the upper conduit and the lowermost portion of the lower conduit;

and further in which the width of the lower conduit in the longitudinal direction of the drier is less than the width of the upper conduit in the longitudinal direction of the drier.

2. A drier according to Claim 1, in which said lower and upper conduits each have a planar face facing towards the support plane, the plurality of apertures associated with each respective conduit being provided in the respective planar face of that conduit,

the planar face of the lower conduit being narrower than the planar face of the upper conduit.

3. A drier according to Claim 1 or 2, in which the cross-sectional area of the lower and upper conduits at a given distance along the transverse direction of the drier is the same.

4. A drier according to Claim 3, in which the width of the lower conduit in the longitudinal direction of the drier is less than 90% of the width of the upper conduit in the longitudinal direction of the drier.

5. A drier according to any preceding claim, further comprising a panel that is aligned with the longitudinal direction of the drier and intersects the support plane, the panel being for enhancing airflow in the longitudinal direction of the drier.

6. A drier according to Claim 5, in which the panel is provided at the downstream end of the conduits, relative to the direction of airflow along the conduits.

7. A drier according to any preceding claim, in which the cross-sectional area of at least one of the lower and upper conduits decreases in a transverse direction of the drier.

8. A drier according to Claim 7, in which at least one of the lower and upper conduits has a cross section that decreases continuously in a transverse direction of the drier, for at least part of the length of the at least one conduit.

9. A drier according to any preceding claim, in which at least 90% of the plurality of apertures provided in the lower conduit are distributed within two bands extending along the length of the conduit, the bands being provided in the lateral portion of the conduit and being separated by a central strip comprising at least 55% of the width of the conduit.

10. A drying system comprising a drier according to any preceding claim, the system being configured such that the airflow directed by the air inflow means is heated using thermal energy recovered from an exhaust conduit provided within the system.

11. A drying system according to Claim 10, the system comprising a heat pump for transferring thermal energy from the exhaust to the air inflow means.

12. A system according to Claim 10 or 11, in which the exhaust conduit provides an outlet for steam generated by a drying chamber located up-stream or downstream of said drier.

13. A drier for drying a board, the drier housed in a drying chamber, the board having two principal surfaces that are opposed to each other, the drier comprising:

conveying means for conveying the board along a longitudinal direction of the drier, the conveying means further being for supporting the board in a support plane containing the longitudinal direction of the drier;

air inflow means for directing airflow towards at least one of the principal surfaces of the board; and

airflow control means comprising a panel that is aligned with the longitudinal direction of the drier and intersects the support plane,

the panel within the drying chamber, and

the panel being for enhancing airflow in the longitudinal direction of the drier.

14. A drier according to Claim 13, in which the air inflow means comprises a conduit extending transversely to the longitudinal direction of the board, the conduit comprising a plurality of apertures for directing airflow towards the board,

in which the cross-sectional area of the conduit decreases in a downstream direction of the conduit.

15. A drier according to Claim 13, in which the air inflow means comprises a conduit extending transversely to the longitudinal direction of the board, the conduit comprising a plurality of apertures for directing airflow towards the board,

in which the panel is located at the downstream end of the conduit, relative to the direction of airflow along the conduit.