Amended Claims

1. A mobile concrete batching plant with safety precaution device, comprising: a container body (7) mounted on a draggable trailer frame (1), within the container body (7) a mixer (2) and a central control unit (14) being arranged, wherein the mixer (2) respectively connects to a cement pound cylinder (3), a water pound cylinder (13) and an aggregate unit for receiving, weighing and feeding aggregates, the aggregate unit including a motorized belt conveyor (15), a belt pound scale (4) mounted on the motorized belt conveyor (15), and an aggregate storage device (8), and wherein a permanent cement storage device (11) connecting to the cement pound cylinder (3) is mounted on the upper end of the container body (7),

characterized in that, within the container body (7) there are further provided with an air compressor for supplying power to the central control unit (14) and the mixer (2) at emergency situations, a rapid switching device for temporary power supply, a rapid connecting device for outside power supply and a main panel box~~.~~,

the plant further comprises an additive pound cylinder (12) connecting to the cement pound cylinder (3), a permanent water storage tank and pumping line (50) connecting to the water pound cylinder (13), and a permanent additive pound cylinder and pumping line (60) connecting to the additive pound cylinder (12), wherein the additive pound cylinder (12) is provided with a flow inlet and a flow outlet respectively at the upper end and the lower end thereof, the flow inlet being connected with the delivery pipe of the permanent additive pound cylinder and pumping line (60) while the flow outlet being connected with the water inlet (131) of the water pound cylinder (13),

the central control unit (14) further includes an in-air remnant module (142), a gate control module (143) and a display module (141) connected with each other in this order, wherein the in-air remnant module (142) connects to the permanent cement storage device (11), the permanent water storage tank and pumping line (50), the permanent additive pound cylinder and pumping line (60) and the aggregate storage device (8) respectively, for determining mass of the in-air remnant respectively generated when the gates of the permanent cement storage device (11), the permanent water storage tank and pumping line (50), the permanent additive pound cylinder and pumping line (60) and the aggregate storage device (8) are closed,and when the mass of cement, water, additives and aggregates weighed is equal to the difference between the mass required by the formulation input by the user and the corresponding mass of

the in-air remnant, the gate control module (143) will close the corresponding gate of the permanent cement storage device (11), the permanent water storage tank and pumping line (50), the permanent additive pound cylinder and pumping line (60) and the aggregate storage device (8).

~~2. The mobile concrete batching plant according to claim 1, characterized in that, further comprising an additive pound cylinder (12) connecting to the cement pound cylinder (3), a permanent water storage tank and pumping line (50) connecting to the water pound cylinder (13), and a permanent additive pound cylinder and pumping line (60) connecting to the additive pound cylinder (12), wherein the additive pound cylinder (12) is provided with a flow inlet and a flow outlet respectively at the upper end and the lower end thereof, the flow inlet being connected with the delivery pipe of the permanent additive pound cylinder and pumping line (60) while the flow outlet being connected with the water inlet (131) of the water pound cylinder (13).~~

~~3. The mobile concrete batching plant according to claim 2, characterized in that, the central control unit (14) further includes an in-air remnant module (142), a gate control module (143) and a display module (141) connected with each other in this order;~~

~~wherein the in-air remnant module (142) connects to the permanent cement storage device (11), the permanent water storage tank and pumping line (50), the permanent additive pound cylinder and pumping line (60) and the aggregate storage device (8) respectively, for determining mass of the in-air remnant respectively generated when the gates of the permanent cement storage device (11), the permanent water storage tank and pumping line (50), the permanent additive pound cylinder and pumping line (60) and the aggregate storage device (8) are closed;~~

~~and when the mass of cement, water, additives and aggregates weighed is equal to the difference between the mass required by the formulation input by the user and the corresponding mass of the in-air remnant, the gate control module (143) will close the corresponding gate of the permanent cement storage device (11), the permanent water storage tank and pumping line (50), the permanent additive pound cylinder and pumping line (60) and the aggregate storage device (8).~~

2~~1~~4. The mobile concrete batching plant according to claim 1~~3~~, characterized in

that, further comprising an alarming module (145) connecting to the central control unit (14), for automatically giving an alarm when there is a fault in the batching plant, wherein the central control unit (14) sends out a command for emergent shutdown.

35. The mobile concrete batching plant according to claim 24, characterized in that, further comprising an aggregate weighing error-proofing module (146) connecting to the central control unit (14), for opening the gate associated with the aggregate to be weighed only but locking the gates associated with other aggregates not to be weighed so that incorrect weighting can be avoided, wherein the belt pound scale (4) weighs all the aggregates in the formulation one by one in sequence.

46. The mobile concrete batching plant according to claim 35, characterized in that, further comprising a man-machine interface (147) connecting to the central control unit (14), for inputting the preset concrete formulation and the control parameters of the manufacturing process into the system.

57. The mobile concrete batching plant according to claim 46, characterized in that, the man-machine interface (147) is a keypad or a touch screen arranged on the display module (141).

68. The mobile concrete batching plant according to any one of claims 1 to 57, characterized in that, the aggregate storage device includes a lower storage part (81) and a foldable upper storage part (82), which are provided inside and outside the container body (7) respectively and connected with each other.

79. The mobile concrete batching plant according to any one of claims 1 to 57, characterized in that, at the upper end of the belt pound scale (4) an upper port is provided, with which a discharging port provided at the lower end of the lower storage part (81) connects, and at the lower end of the permanent cement storage device (11) there is provided with an outlet which is connected to the inlet (31) of the cement pound cylinder (3).

810. The mobile concrete batching plant according to any one of claims 1 to 57, characterized in that, a distributor (10) is mounted on the upper end of the container

body (7).

9~~11~~. A concrete mixing method of the mobile concrete batching plant according to any one of claims 1 to 8~~10~~, comprising the following steps:

weighing the required mass of cement, water, additives and aggregates in advance according to the requirement of concrete formulation by means of the cement pound cylinder (3), the water pound cylinder (13), the additive pound cylinder (12) and the belt pound scale (4);

opening the gate of the additive pound cylinder (12) and adding additives into the water pound cylinder (13);

delivering the water mixed with additive weighed by the water pound cylinder (13), the cement weighed by the cement pound cylinder (3) and the aggregates weighed by the belt pound scale (4) into the mixer (2) for mixing;

discharging the material obtained.

10~~12~~. The concrete mixing method according to claim 9~~11~~, characterized in that, the belt pound scale (4) weighs the aggregates as follows:

when a certain kind of aggregate is to be weighed, only the gate associated with the aggregate to be weighed is opened, and the gates associated with other aggregates, which are not to be weighed, are locked so that an incorrect weighting can be avoided, wherein the belt pound scale (4) weighs all the aggregates in the formulation one by one in sequence.