

CONSTRUCTION METHOD OF CLEAN ROOM

FIELD OF THE INVENTION

The present invention relates to a construction procedure and quality test method of a clean room and, more particularly, to a clean room construction method capable of greatly reducing the man-hours, securing the quality of construction, and effectively lowering the construction cost.

BACKGROUND OF THE INVENTION

Clean rooms have been widely used in semiconductor foundries, IC test regions, mask laboratories, and so on. The conventional construction procedure of a clean room is very cumbersome, and checkup work must be performed for the whole engineering one by one. This work is very time-consuming. If some engineering is found to be problematic during the checkup process, this engineering must be repaired. Because subsequent engineering has been finished, repair of the above problematic engineering will be unavoidably impeded, resulting in much inconvenience. Therefore, the man-hours and the construction cost of a clean room will increase a great deal. Furthermore, some improving works of problems found ex post facto affect the operation of an already running clean room.

SUMMARY OF THE INVENTION

The primary object of the present invention is to provide a clean room construction method, which comprises building handover engineering, industrial safety and sanitation engineering, hypothetical engineering, painting engineering, floor protection engineering, cat walk installment engineering, reinforced concrete (R.C.) base engineering, air-conditioning box assembly engineering, air pipe engineering, mold engineering, fire-control sprinkling

pipeline engineering, cold/hot water pipeline engineering, electric power engineering, system test engineering, clean room test engineering, and so on.

Checkup work is performed immediately after each of these engineering. If some engineering is found to be problematic, it is immediately repaired.

5 Therefore, it is not necessary to perform cumbersome checkup work before handover, hence greatly reducing the man-hours, effectively lowering the construction cost, and simultaneously securing the construction quality.

The various objects and advantages of the present invention will be more readily understood from the following detailed description when read in
10 conjunction with the appended drawings, in which:

BRIEF DESCRIPTION OF THE DRAWINGS:

Figs. 1A, 1B, 1C, 1D, and 1E show the process flow of construction procedures of the present invention.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

15 As shown in Figs. 1A, 1B, 1C, 1D, and 1E, the present invention provides a clean room construction method, which comprises the following steps.

First, a building handover engineering 100 is performed, and a checkup work 101 is then performed.

If the quality is found not to meet the requirement of handover, the building
20 handover engineering 100 is performed again. If the quality is found to meet the requirement of handover, an industrial safety and sanitation engineering 102 is performed, and a checkup work 103 of the industrial safety and sanitation engineering is then performed.

If the result of the checkup work 103 is negative, the industrial safety and
25 sanitation engineering 102 is performed again; otherwise, a hypothetical

engineering 104 is performed.

Next, a painting engineering 105 is performed to paint epoxy on the building for resisting acids and alkalis. A checkup work 106 is then performed. If the result of the checkup work 106 is negative, the painting engineering 105 is performed again; otherwise, a floor protection engineering 107 is performed, and a checkup work 108 of the floor protection engineering is then performed.

If the result of the checkup work 108 is negative, the floor protection engineering 107 is performed again; otherwise, a cat walk installment engineering 109 is performed, and a checkup work 110 of the cat walk installment engineering is then performed.

If the result of the checkup work 110 is negative, the cat walk installment engineering 109 is performed again; otherwise, an R.C. base engineering 111, an air-conditioning box installment engineering 112, an air pipe engineering 113, a mold engineering 114, a fire-control sprinkling pipeline engineering 115, a cold/hot water pipeline engineering 116, and electric power engineering 117 and 118 are performed, and checkup work 119, 120, 121, 122, 123, 124, 125, and 126 are then performed immediately after the above engineering. The above air-conditioning box installment engineering 112 comprises the work of motor installment, cold/hot pipeline installment, wind wheel installment, and moisture-enhancer installment. The air pipe engineering comprises the work of wind wheel installment. The electric power engineering 117 and 118 comprises the work of switchboard installment, power pipeline installment, and grounding engineering.

If the result of the checkup work of a certain engineering is negative, the engineering is performed again; otherwise, a system test engineering 127 and a

clean room test engineering 128 are performed in turn. Next, a handover engineering 129 is performed.

If the result of the checkup work 122 of the mold engineering 114 is positive, a T-beam engineering 130 and a peripheral wall engineering 142 can further be performed. A checkup work 131 is performed after the T-beam engineering 130.

If the result of the checkup work 131 is negative, the T-beam engineering 130 is performed again; otherwise, a stainless steel safety net engineering 132 is performed, and a checkup work 133 of the safety net engineering is then performed.

If the result of the checkup work 133 is negative, the safety net engineering 132 is performed again; otherwise, an elevated floor engineering 134 is performed, and a checkup work 135 of the elevated floor engineering is then performed.

If the result of the checkup work 135 is negative, the elevated floor engineering 134 is performed again; otherwise, a floor protection engineering 136 is performed, and a checkup work 137 of the floor protection engineering is then performed.

If the result of the checkup work 137 is negative, the floor protection engineering 136 is performed again; otherwise, a communal crane engineering 138 is performed.

Additionally, it is necessary to perform a checkup work 143 after the peripheral wall engineering 142.

If the result of the checkup work 143 is negative, the peripheral wall engineering 142 is performed again; otherwise, a PVC (polyvinyl chloride)

floor engineering 144 is performed, and a checkup work 145 of the PVC floor engineering is then performed.

If the result of the checkup work 145 is negative, the PVC floor engineering 144 is performed again; otherwise, a floor protection engineering 146 is performed, and a checkup work 147 of the floor protection engineering is then performed.

If the result of the checkup work 147 is negative, the floor protection engineering 146 is performed again; otherwise, the communal crane engineering 138 can be performed with the elevated floor, and a checkup work 139 of the communal crane engineering is then performed.

If the result of the checkup work 139 is negative, the communal crane engineering 138 is performed again; otherwise, a ceiling T-bar installment engineering 140 is performed, and a checkup work 141 of the ceiling T-bar installment engineering is then performed.

If the result of the checkup work 141 is negative, the ceiling T-bar installment engineering 140 is performed again; otherwise, a venthole and filter installment engineering 148, an internal partition engineering 149, a lamp/sensor/socket/speaker installment engineering 150, and a sprinkling head installment engineering 151 are performed, and checkup work 152, 153, 154, and 155 are then performed immediately after the above engineering. Next, the system test engineering 127, the clean room test engineering 128, and the handover engineering 129 are performed.

The present invention is characterized in that a novel construction procedure and quality test method of a clean room is provided, wherein a checkup work is performed immediately after each engineering. Therefore, it is not necessary to

perform a very cumbersome checkup work before handover, hence greatly reducing the man-hours, effectively lowering the construction cost, and simultaneously securing the construction quality.

Although the present invention has been described with reference to the preferred embodiments thereof, it will be understood that the invention is not limited to the details thereof. Various substitutions and modifications have been suggested in the foregoing description, and others will occur to those of ordinary skill in the art. Therefore, all such substitutions and modifications are intended to be embraced within the scope of the invention as defined in the
10 appended claims.



I claim:

1. A clean room construction method comprising the steps of:

performing a building handover engineering and then a checkup work thereof;

- 5 performing again said building handover engineering if the result of said checkup work thereof is negative, otherwise performing an industrial safety and sanitation engineering and then a checkup work thereof;

performing again said industrial safety and sanitation engineering if the result of said checkup work thereof is negative, otherwise performing a

- 10 painting engineering and then a checkup work thereof;

performing again said painting engineering if the result of said checkup work thereof is negative, otherwise performing a floor protection engineering and then a checkup work thereof;

performing again said floor protection engineering if the result of said

- 15 checkup work thereof is negative, otherwise performing a cat walk installment engineering and then a checkup work thereof;

performing again said cat walk installment engineering if the result of said checkup work thereof is negative, otherwise performing an R.C. base

engineering, an air-conditioning box assembly engineering, an air pipe

- 20 engineering, a mold engineering, a fire-control sprinkling pipeline

engineering, a cold/hot water pipeline engineering, and an electric power engineering and then checkup work thereof immediately after each of said

engineering; and

performing again said engineering if the result of said checkup work thereof

- 25 is negative, or performing a system test engineering and a clean room test



engineering and then a handover engineering if the results of all said
checkup work are positive.

2. The clean room construction method as claimed in claim 1 further
comprising the steps of:

5 performing a T-beam engineering and a peripheral wall engineering if the
result of said checkup work of said mold engineering is positive, performing
then a checkup work after said T-beam engineering;

performing again said T-beam engineering if the result of said checkup work
thereof is negative, otherwise performing a stainless steel safety net
10 engineering and then a checkup work thereof;

performing again said safety net engineering if the result of said checkup
work thereof is negative, otherwise performing an elevated floor engineering
and then a checkup work thereof;

performing again said elevated floor engineering if the result of said checkup
15 work thereof is negative, otherwise performing a floor protection
engineering and then a checkup work thereof;

performing again said floor protection engineering if the result of said
checkup work thereof is negative, otherwise performing a communal crane
engineering and then a checkup work thereof;

20 additionally, performing a checkup work after said peripheral wall
engineering;

performing again said peripheral wall engineering if the result of said
checkup work thereof is negative, otherwise performing a PVC floor
engineering and then a checkup work thereof;

25 performing again said PVC floor engineering if the result of said checkup



work thereof is negative, otherwise performing a floor protection engineering and then a checkup work thereof;

performing again said floor protection engineering if the result of said checkup work thereof is negative, otherwise performing said communal
5 crane engineering with said elevated floor and then a checkup work thereof;
performing again said communal crane engineering if the result of said checkup work thereof is negative, otherwise performing a ceiling T-bar engineering and then a checkup work thereof; and

performing again said ceiling T-bar engineering if the result of said checkup
10 work thereof is negative, otherwise performing a venthole and filter installment engineering, an internal partition engineering, a lamp/sensor/socket/speaker installment engineering, and a sprinkling head installment engineering and checkup work thereof immediately after each of said engineering, next performing a system test engineering.

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