

# Monitoring of wood solid panels quality using the cause-and-effect diagram



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- The production of solid wood panels with its two crucial processes wood processing and gluing process has the chain of its own specificities that are the subjects of this work study. The production of solid wood panels makes the circled production process from sawmill production, steaming, drying, processing technology to the process of getting solid massive panels.



- The research that has been implemented among the biggest thirteen customers of solid massive panels produced by BiH manufacturers should give an answer on the following questions:
- Who are customers of solid massive panels produced by manufacturer from BiH?
- What are customers' requirements regarding the quality?
- What are influencing factors and the way of their evaluation what present the limiting factor while making the choice of supplier?



## Research includes:

- Survey for customers
- Survey for producers
- Interpreting of frequent subjective opinion to measurable units using QFD quality tool
- Analysing of influencing factors using  $\chi^2$  – test
- Use of other tools, Pareto analysis, Causse and Effects diagram, DoE...

As the results the most significant characteristics are gained which present limiting factors for customers in business with certain producers.

In that way using  $\chi^2$  – test , we get:



Table 1. Influencing factors

Capacity	1,8
Finger joint and planning machine for the surface at which the glue is put on	7,5
Capacity harmonization	5,3
Managing the warehouse, relation with supplier and raw material quality	7,36
Steaming and drying treatment	5,3
Technical-technological capability of the company	5
Moisture contents	4,37
Small assortments	7,86
Delivery deadline	6,4



- Therefore, CFS-Critical Success Factors of companies producing solid massive panels are:
- High level of technical-technological capability.
- Organization of control of moisture of raw material and the product.
- High level of quality of raw material as well as relations and classification of supplier and managing the warehouse.
- Production capacity.
- Harmonization of capacities between producing units.
- Wide range of product assortment.
- Respecting the delivery deadline .

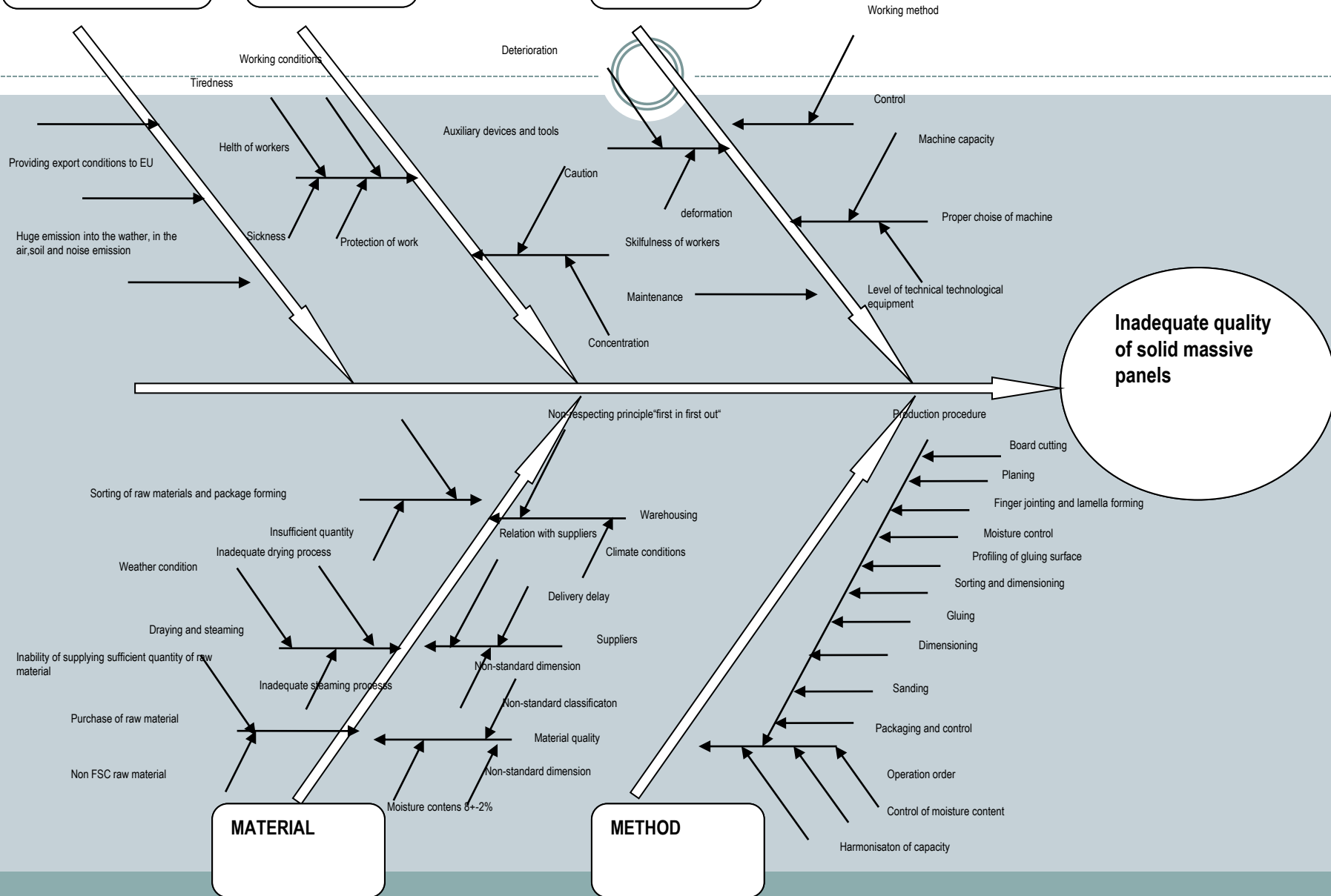


- On the abovementioned diagram influencing factors up to third level are presented using the model 4M1E. Structured overview of diagram visibly shows cause of problems or qualitative characteristics. Due to above mentioned, other advantages of this overview are:
- Encouraging group work involving proposal of all holders of business
- Introduction of all employees with all process and important influencing factors
- Simple way of presentation
- Defining directions for further research.

**ENVIROMENTAL**

**MEN**

**MACHINES**







- Nowadays defining the clear customers' requirements, their involvement in preparation of production and respecting customers' requirements by manufacturers present the most important factor of success production. Use of tool of quality presents extremely important help to manufacturers for monitoring the production and defining preventive actions which as result have prevention of appearance of non-conformances products.