

SMED analysis form

make **X**cellence

Copy this form for a single changeover type. First fill in the observation part based on the real sequence, and only after jointly analysing the map add improvement ideas. If different changeover variants run differently, record them separately.

A Scope and observation conditions

Field	Team's entry
Plant / area / line	
Machine / workstation	
Product / tool before → after the change	
Date, shift, observers	
Operators taking part in the analysis	
Start of measurement (exact event)	
End of measurement (exact event)	
Definition of "first good part"	
Number and dates of observed changeovers	
Conditions that may change the result (crew, product family, support)	

B *Log of the current process*

Record in time order. In the “machine status” column enter **running / stopped**. For parallel work, assign activities to a person and mark overlaps on the same timeline. Do not mechanically add up several people's times.

No.	Activity and observation	Person / role	Start-end	Time	Machine status running / stopped	Int. / ext.	Searching, waiting, movement, rework or risk?
1							
2							
3							
4							
5							
6							
7							
8							
9							
10							

B *Log of the current process (continued)*

Record in time order. In the “machine status” column enter **running / stopped**. For parallel work, assign activities to a person and mark overlaps on the same timeline. Do not mechanically add up several people's times.

No.	Activity and observation	Person / role	Start-end	Time	Machine status running / stopped	Int. / ext.	Searching, waiting, movement, rework or risk?
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							

Current-state summary

The diagram consists of five rectangular boxes arranged in two rows. Each box has a yellow header bar at the top. The boxes contain the following text:

- MACHINE DOWNTIME**
from stop to restart
min
- TIME TO FIRST GOOD PART**
as defined in part A
min
- TOTAL LABOUR INPUT**
sum of all people's time
h / min
- START-UP PARTS / SCRAP**
parts until approval and waste
pcs
- QUALITY AND SAFETY DEVIATIONS**
what, when, who reported

Additional notes

[illegible]

C

Analysis and proposed changes

For an internal step ask: what, technically or for safety reasons, requires the machine to be stopped? Do not reclassify work as external if it requires access to a hazardous zone or bypasses interlocks.

Current step	What makes it necessary during downtime?	Can it be prepared or done earlier/later? How, safely?	Improving the remaining internal work	Owner / deadline

Analysis and proposed changes

Who prepares, using which checklist, how is kit readiness confirmed?

This image shows a single sheet of white paper with horizontal ruling lines. The lines are evenly spaced and extend across the width of the page. There are no margins, text, or other markings on the paper.[illegible]

D ***Trial plan and verification***

Write down the prediction **before** the trial: If we change **X**, we expect **Y**, because we assume **Z**. We will test it under conditions **W**, measuring **M**.

Item	Agreed
What are we changing in this trial?	
What result do we expect and why?	
On which machine / product family / shift?	
Who prepares and who runs the trial?	
Who measures and using which definitions?	
Which safety and quality requirements must be met?	
When will we assess the results and who will decide?	

D ***Trial plan and verification***

For each trial record the product, shift, crew, kit completeness and significant deviations. An average of several trials can hide that once the target was reached and once the time went back to baseline.

Measure	Before change	Trial 1	Trial 2	Trial 3	Notes / differences in conditions
Machine downtime					
Time to first good part					
Total labour input					
Start-up scrap / waste					
Safety or quality deviations					
Kit completeness before downtime					

D**Conclusion****What improved?**

What did not work as predicted?

What new problems arose?

What do we still not know?

D**Decision**

- ☐ repeat the trial ☐ improve the solution ☐ extend the test ☐ implement and standardise
- ☐ reject the change

NEXT STEP**OWNER****DEADLINE**

Form: makeXcellence, based on the article "PDCA: the task is closed, but is the problem solved?" – makexcellence.pl/en/blog/pdca-przezbrojenie-smed/. SMED is not about speeding up the operator: safety, quality and process stability remain the priorities.