

Common Asset Management KPIs

Metric	What it is	What it measures	Why it is used	How to calculate it	World-Class Benchmark
MTTR	Mean Time to Repair	The average time required to repair an asset from the moment it fails to the moment it is returned to service.	To measure how quickly the maintenance team responds to, and resolves, asset failures.	$\text{Total repair time} \div \text{Total number of repairs}$	Less than 5 hours ¹
MTBF	Mean Time Between Failures	The average time an asset performs its intended function (under normal operation) before a failure occurs.	To measure an asset's or system's reliability (i.e., ability to perform required functions under certain conditions).	$\text{Total uptime} \div \text{Total number of failures}$	Depends on multiple factors; higher MTBF is better
OEE	Overall Equipment Effectiveness	The percentage of planned production time that is truly productive (i.e., producing acceptable quality goods at the maximum speed possible with no interruptions) ²	To compare an asset's performance against industry standards, similar in-house assets, or its own performance under different operating conditions.	$\text{Availability} \times \text{Performance} \times \text{Quality}$	85% ²
Availability	Availability (OEE)	The percentage of time an asset is operational and ready to run during planned production time.	To measure an asset's reliability and uptime, taking into account any events that stop planned production. Helps identify losses due to downtime.	$\text{Total run time} \div \text{Planned production time}$	90% ³
Performance	Performance (OEE)	The percentage of time the manufacturing process is running relative to its maximum possible speed.	To measure how efficiently an asset operates relative to its designed or ideal speed. Helps identify losses that slow or stop the manufacturing process.	$(\text{Ideal cycle time} \times \text{Total count}) \div \text{Run time}$	95% ³
Quality	Quality (OEE)	The percentage of good-quality units produced relative to the total number of units produced.	To measure the accuracy and consistency of production in meeting quality standards. Helps identify losses due to rework and defects.	$\text{Good count} \div \text{Total count}$	99% ³

Sources:

1. Trout, J. (2019, November 21). *Mean time to repair (MTTR) explained* | *Reliable plant*. Reliable Plant. <https://www.reliableplant.com/mttr-31713>
2. *Understanding OEE in lean Manufacturing* | *Lean Production*. (n.d.). <https://www.leanproduction.com/oee/>
3. *World-Class OEE: Set Targets to Drive Improvement* | *OEE*. (n.d.). <https://www.oee.com/world-class-oee/>