

Asphalt Compaction Documentation – ACD



Principle

The basic idea behind the patented ACD-method is the recording of the compaction history of small area parts (cells) and the reduction of the history into one result value for each cell. The size of the cells can vary, but is normally of the order of 1 m².

The history is documented by:

1. The time, mix temperature and layer thickness when the mix is leaving the paver.
2. A series of events in the form of individual drum passes. The time, asphalt surface temperature and roll speed of each drum pass are recorded.

Each separate drum pass is evaluated in terms of the incremental effective compaction it produces.

The magnitude of the incremental compaction is calculated from known or measured parameters like

- accumulated compaction result prior to the current event, calculated as a sum of the paver compaction and the incremental compaction results from all previous drum passes

- the hot-mix temperature at the current drum pass
- the properties of the hot-mix (compactability, thickness)
- drum-data (line load, radius, static, vibratory, oscillatory)
- the roll speed of the drum at the passage
- the time after paving

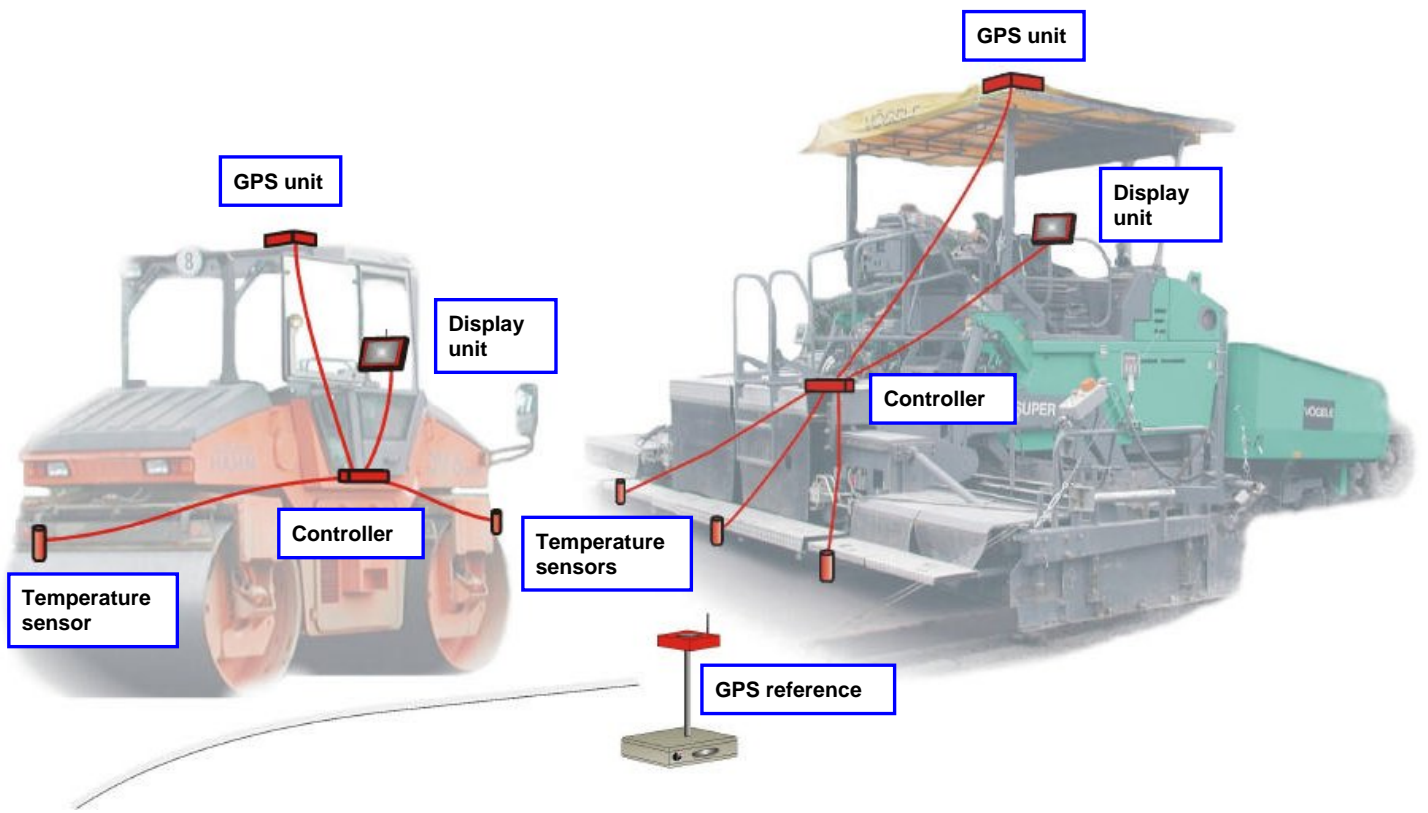
The end result from the ACD-system is the so called ACV (Asphalt Compaction Value) in each cell.

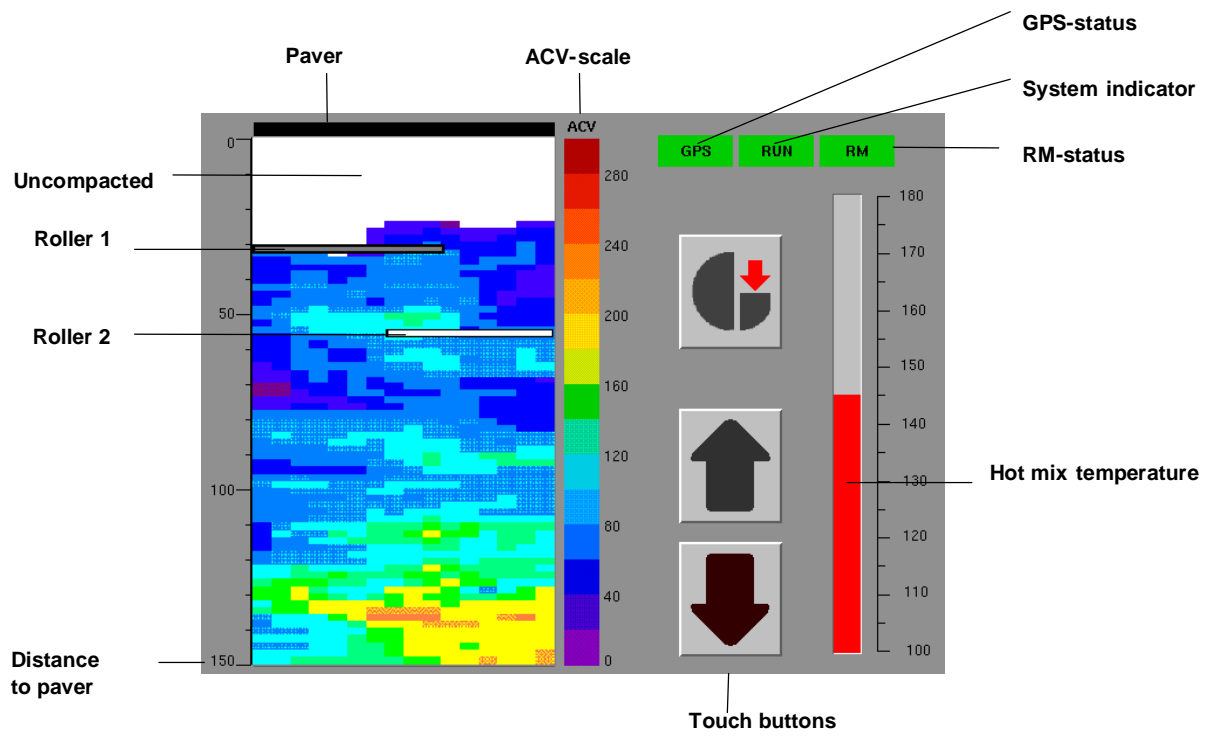
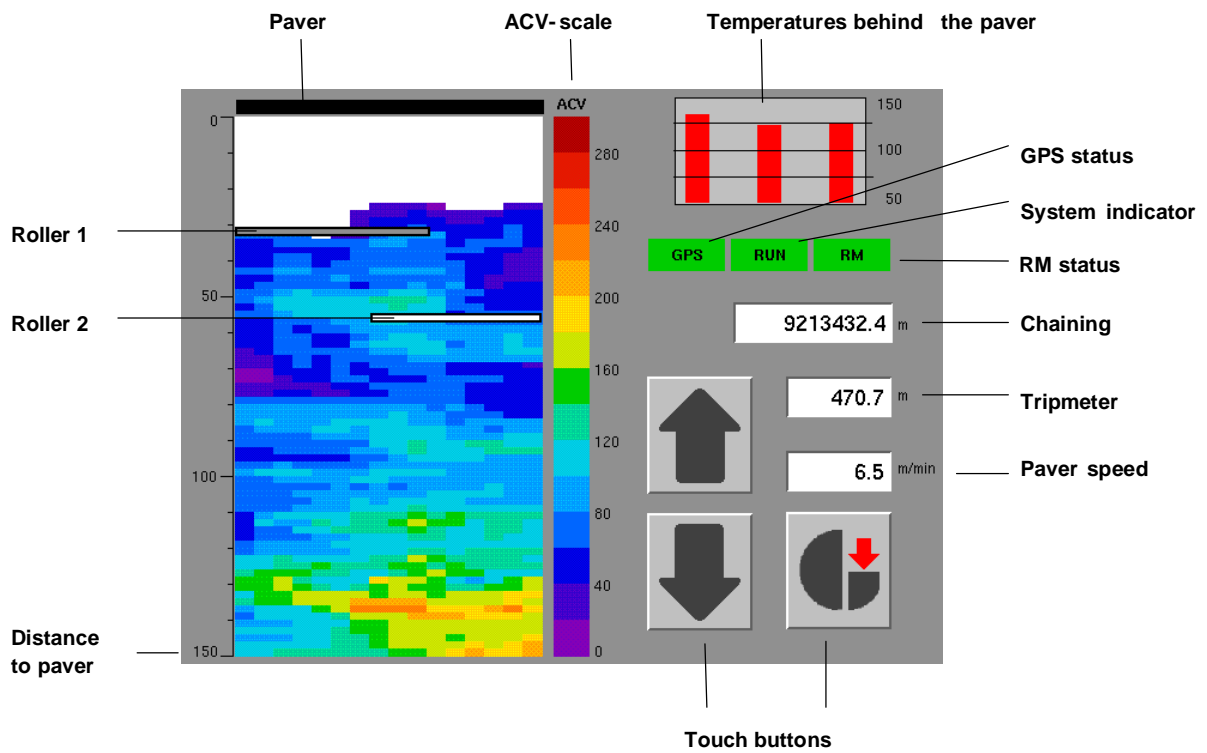
The result is shown to the paver- and roller operators in real time on screens on the paver and in the roller cabins. The screen can display either ACV or total number of passes as a 2-D colour picture of the asphalt layer. The picture covers an area equal to the width of the layer and the length of 150 m behind the paver. The picture is continuously updated and scrolls downwards as the paver is moving. The rollers are shown as symbols moving over the screen.

ACD is a complete system showing to the operators the total compaction work achieved by the paver and all rollers.

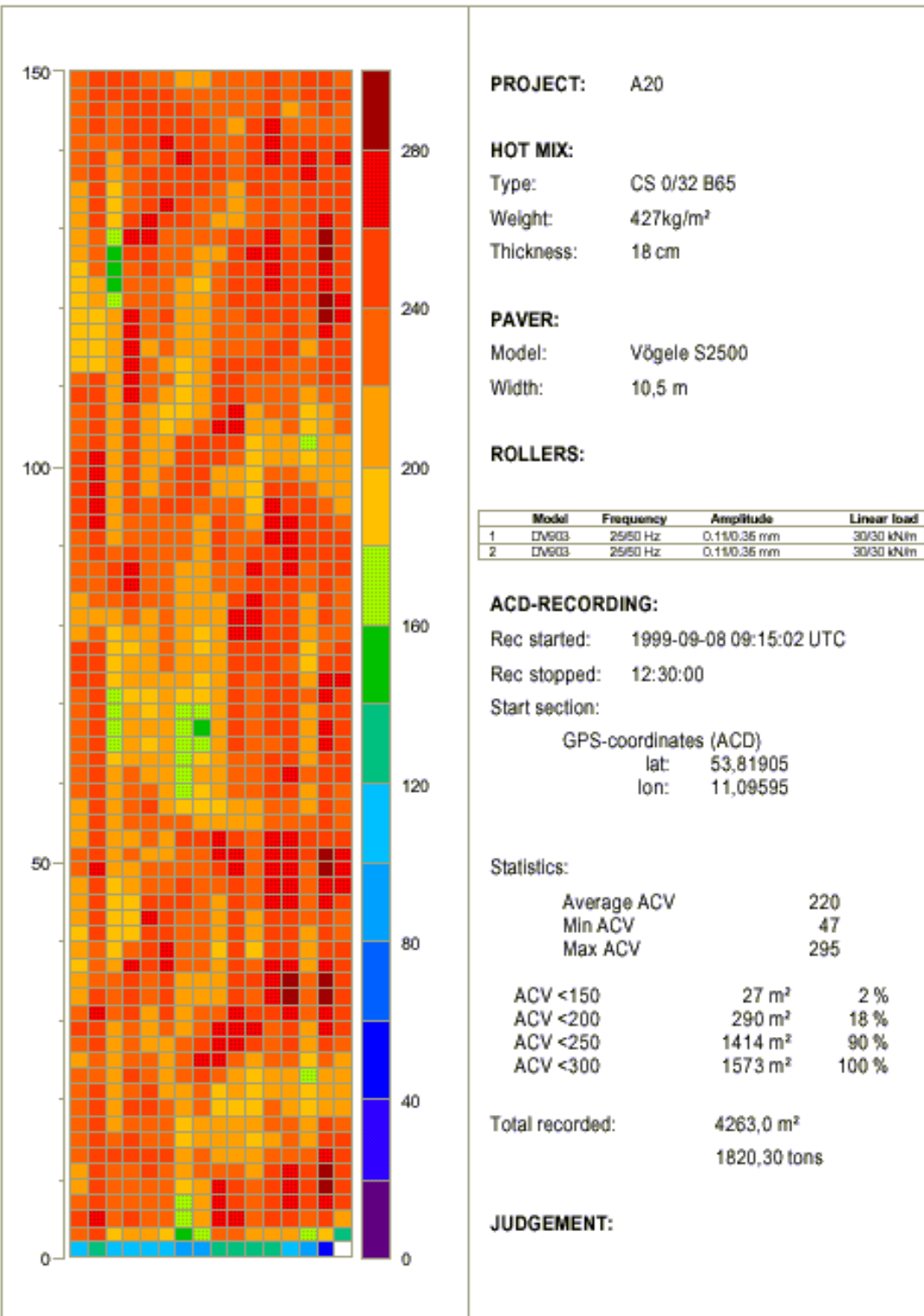
The recorded results are subsequently transferred to a PC with a PCcard and the results are printed on paper as ACD protocols. One ACD protocol page covers a length of 150m and shows the colour picture of the ACV over the area and a text section containing

- project info
- hot mix data
- reference coordinates
- statistics





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