

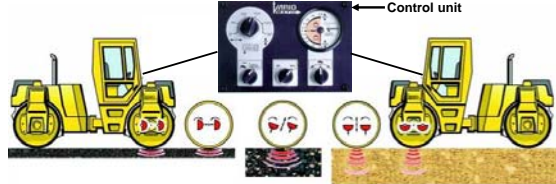
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INNOVATIONS IN TECHNOLOGY

CW CHUCK DEAHL
NATIONAL ACCOUNT MANAGER
COMPACTION AMERICA

Vibratory compaction VARIOMATIC




low dynamic energy **high dynamic energy**

Compaction principle: static pressure and dynamic energy which is automatically adjusted to type of material, compactibility, layer thickness and base layer conditions.

Applications: asphalt layers, granular bases and subbases.

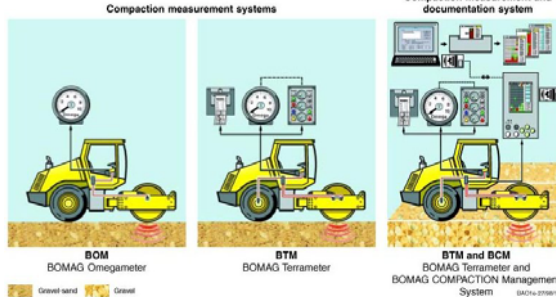
Legend: Asphalt thin course, Asphalt base course, Gravel sand

Advantages of the VARIOMATIC concept for tandem rollers



- Universal use on road base and wearing course layers and thin layers
- Higher compaction performance
- Uniform compaction, even on sub-bases with inhomogeneous stiffness
- Better flatness and more uniform surface structure on asphalt layers
- Low tendency to scuffing

Roller mounted compaction measurement and documentation systems



BOM
BOMAG Omegameter

BTM
BOMAG Terrameter

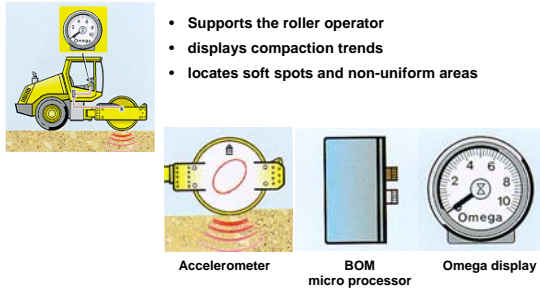
BTM and BCM
BOMAG Terrameter and BOMAG COMPACTION Management System

Legend: Gravel sand, Gravel

BTM / BCM Applications

| Applications | Examples | Advantages | Suitability |
|---|---|---|----------------------------|
| Proof rolling of sub-grade | Foundations Sub-grades | Identifies and documents soft spots and non-uniform areas (proof rolling) ⇒ reduced number of conventional compaction tests | All types of soil |
| Identification of weak spots | Embankments Granular bases | Identifies and documents soft spots and non-uniform areas (proof rolling) ⇒ reduced number of conventional compaction tests | All types of soil |
| Identification of maximum compaction | Embankments Granular bases | Comparison of σ -values between different passes | All types of soil |
| Correlation with conventional testing methods | Formations Granular bases Embankments | Continuous compaction control by determination of σ_{max} -values | Rockfill Granular soils |
| Optimisation of compaction | Embankments Granular bases | Higher quality Lower costs | All types of soil |

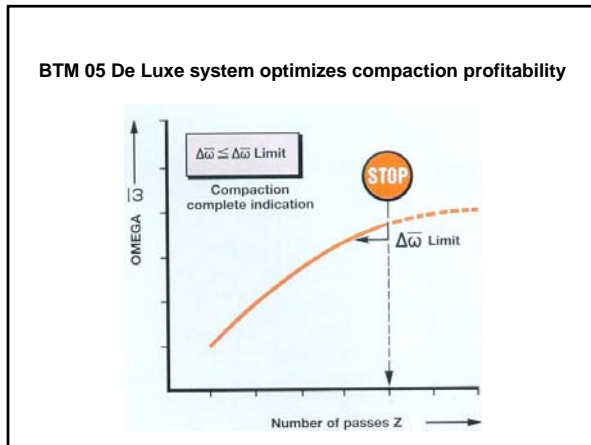
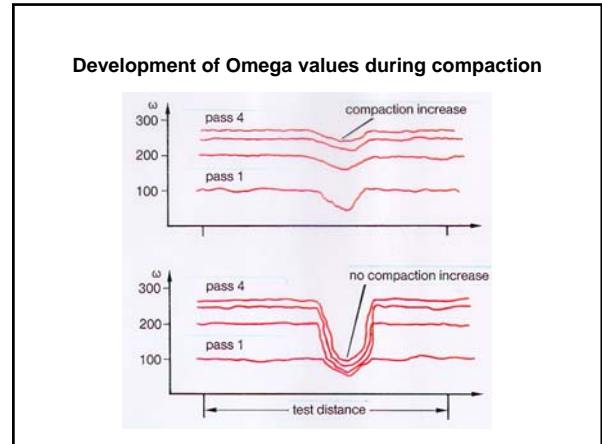
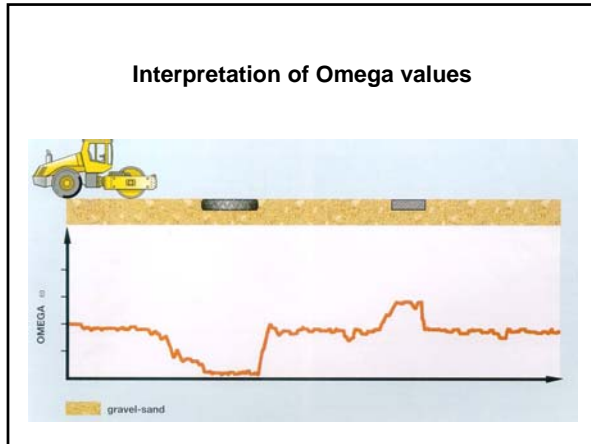
BOMAG Omegameter BOM



- Supports the roller operator
- displays compaction trends
- locates soft spots and non-uniform areas

Accelerometer **BOM micro processor** **Omega display**

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BOMAG Terrameter BTM 05 basic system

| | |
|--------------------|---|
| Two accelerometers | 1 |
| Distance meter | 2 |
| Micro processor | 3 |
| Omega display | 4 |

OPTION:

- Operation / Control unit / Printer
- BCM 03

BOMAG Terrameter BTM 05 De Luxe system

| | |
|--------------------|---|
| Two accelerometers | 1 |
| Distance meter | 2 |
| Micro processor | 3 |
| Operating console | 4 |
| Omega display | 5 |
| Printer | 6 |

OPTION:

- BCM 03

BOMAG Terrameter BTM 05 De Luxe system

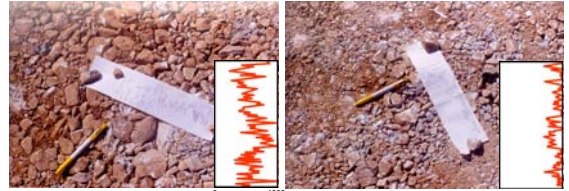
- Reduces compaction costs
- indicates when compaction is complete
- reduces risk of de-compaction
- identifies and documents soft spots and non-uniform areas

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Omega values on rockfills / rockfill dam Macedonia



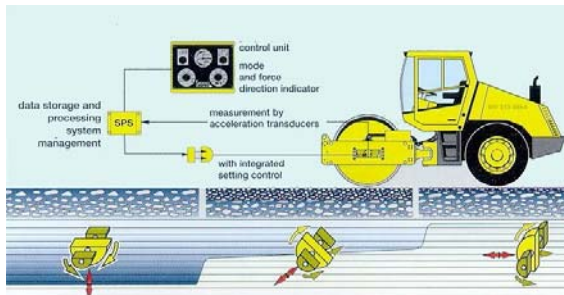
Omega values on rockfill / rockfill dam Macedonia



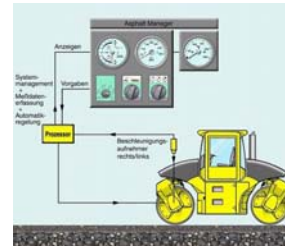
after one pass

after five passes

VARIOCONTROL system for single drum rollers



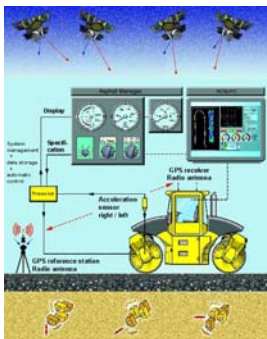
New Standards for compaction: ^{Asphalt-Manager} E_{VIB} (Vibration modulus) - direct correlation to density increase



Asphalt Manager equipment:

- Processor
- Operation and control unit
- E_{VIB} -gauge [MN/m²]
- Temperature gauge

Asphalt Manager + BOMAG GPS System



- Surface covering measurement on asphalt
- Uniform compaction
- Coloured display shows roller track and compaction progress
- Storage + documentation
- Saves time and money
- Risk assurance (e.g. long-term guarantee)

Location of the roller by GPS and real-time presentation of the compaction



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Roller positioning with total station (Geodimeter) for continuous compaction control on asphalt layers

