



CONCRETE GRINDING LTD

Global Flooring Solutions



Possibly the Flattest Floor in the World!

Following extensive development and testing, Concrete Grinding Ltd's recently launched and ground breaking Laser Grinder[®] XPT has successfully completed its first two very narrow aisle floor grinding projects in Germany with astounding results. Staying true to its ULTRAFLAT floor grinding feature, the Laser Grinder[®] XPT achieved possibly the World's flattest floors!

Very Narrow Aisle (VNA) trucks are moving faster and lifting higher than ever before and this puts greater demands on the platform on which these trucks operate. That platform is the concrete floor. Recognising and adapting to clients' changing needs are what CoGri does best. The CoGri Group has spent the last few years developing the next

generation of the Laser Grinder[®]; the Laser Grinder[®] XPT (Xtra Precision Technology), which is now the most technologically advanced floor grinding system in the world, built specifically to work in a fully operational warehouse.

The two projects were completed in collaboration with BS Bodensysteme, Concrete Grinding Ltd's partner in Germany. The first client, a publishing and distribution company based near Stuttgart, were experiencing problems with their BT Toyota VNA trucks bumping and shaking as they travelled down the aisles. The poor standard of floor flatness meant the trucks had to be operated well below their designed speed, consequently slowing down productivity and increasing truck maintenance. Having instructed BS



The Laser Grinder[®] XPT hard at work in a fully stocked aisle, Stuttgart, Germany

Bodensysteme to carry out a Profileograph survey to assess the current state of floor flatness within the aisles, the cause of the problem was not immediately obvious as generally the aisles complied with the DIN 15185 specification (widely recognised in Germany as the

Clients: One in Stuttgart and one in Hannover, Germany.

Problem: BT Toyota and Still VNA trucks bumping and shaking as they travel down the aisles.

Solution: Ultraflat floor grinding with the Laser Grinder[®] XPT.

Floor description: Stuttgart - 4 aisles totalling 332 linear metres; Hannover - 2 aisles totalling 128 linear metres.

Flatness Specification: DIN 15185 and VDMA Guidelines.

Conclusion: First two projects for the new Laser Grinder[®] XPT with astounding level of flatness achieved.

required flatness standard for VNA operation). However, it was quickly determined that the short wavelength characteristic of the floor was the underlying issue (how much the floor 'ripples' over a short

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distance). This characteristic is not controlled in the DIN 15185 specification, nor is the rate in which the profile of the floor is allowed to change over a short distance (known as rate of change) hence these issues were not evident in the survey results. This is not to be confused with the micro wave length of the floor described as Fx numbers in the VDMA Guidelines.

The client wanted a solution that would guarantee the flattest possible aisles whilst ensuring ongoing warehouse activities were not interrupted and chose Concrete Grinding Ltd's new Laser Grinder[®] XPT technology to carry out the project. Each of the 4 aisles measuring 83 metres in length (332 metres in total) were ground in 2 tracks to suit the wheel footprint of the BT Toyota trucks. As the Laser Grinder[®] system is clean and dust free, no existing stock had to be removed from the racking. This meant the client could begin using each aisle immediately after works were completed. In addition, the Laser Grinder[®] XPT is completely self-contained therefore there was no disruption caused by trailing pipes or cables in adjacent aisles, and it is powered by one of the World's most advanced Euro V engines. In fact, the engine is so clean it has virtually zero emissions so warehouse staff could continue working in the immediate vicinity.

After grinding the aisles were re-surveyed to both the DIN 15185 >6m specification and VDMA



One of the finished aisles in Stuttgart, Germany

Guideline, where results confirmed that a truly outstanding level of flatness had been achieved. See DIN 15185 >6m before and after grinding; and VDMA Guideline after grinding graphs with the Laser Grinder[®] XPT - Stuttgart on page 4 & 5.

As soon as the works were finished in Stuttgart, the Laser Grinder[®] XPT went straight to its second project for an abrasives company in Hannover where the client was also having



View from behind the Laser Grinder[®] XPT - clean and dust free, Hannover, Germany

problems with the operation of their Still VNA trucks. The Laser Grinder[®] XPT was used to grind whole aisle width to 1 aisle at 38 metres in length and 1 aisle at 90 metres in length (128 metres total), in a fully operational warehouse. After grinding the aisles were surveyed to both the DIN 15185 >6m specification and VDMA Guideline. See DIN 15185 >6m before and after grinding; and VDMA Guideline after grinding graphs with the Laser Grinder[®] XPT - Hannover on page 6 & 7.



A completed aisle in Hannover - now possibly one of the flattest in the world!

The Concrete Grinding team worked tirelessly on both projects to ensure the new Laser Grinder[®] XPT lives up to its name and the results speak for themselves - the Profileograph surveys taken after grinding revealed the aisles are now possibly some of the flattest in the world! The clients and truck operators were amazed with the results.

Being able to operate within a live warehouse environment is one of the key features of the Laser Grinder[®] system, and this also forms

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part of the Laser Grinder® XPT's many pioneering qualities. Other XPT innovative attributes include:-

- ULTRAFLAT floor grinding
- Guaranteed to achieve all international defined movement specifications; TR34 & TR34 Appendix C, ACI Fmin, DIN 15185, EN 15620 and VDMA
- Reduced emissions which meets the latest Euro 5 standard
- Lower noise levels < 84 DBA
- Curve computer control - allows minimal depth of grinding required to meet the specification by only correcting errors in floor surface regularity, rather than grinding the whole aisle from end to end - a cost effective solution which our competitors cannot offer!
- Enhanced operator control system
- Total flexibility to suit all VNA forklift trucks; 2 tracks, 3 tracks or whole aisle width
- A completely self sufficient machine, with no trailing high voltage cables or water pipes - ensuring very safe working practices are maintained
- No requirement for three phase power or generators - therefore no hidden electricity charges
- Each path is ground flat across its width to ensure that each VNA forklift truck wheel makes full contact with the floor surface
- Laser guided and constantly checks and maintains the correct



path during the grinding process - accurate to within fractions of a millimetre

- Suitable for use in operational food and pharmaceutical storage facilities - even in sub-zero temperatures
- Can grind through bolts up to 12mm thick and metal joints that fall within the required ground path

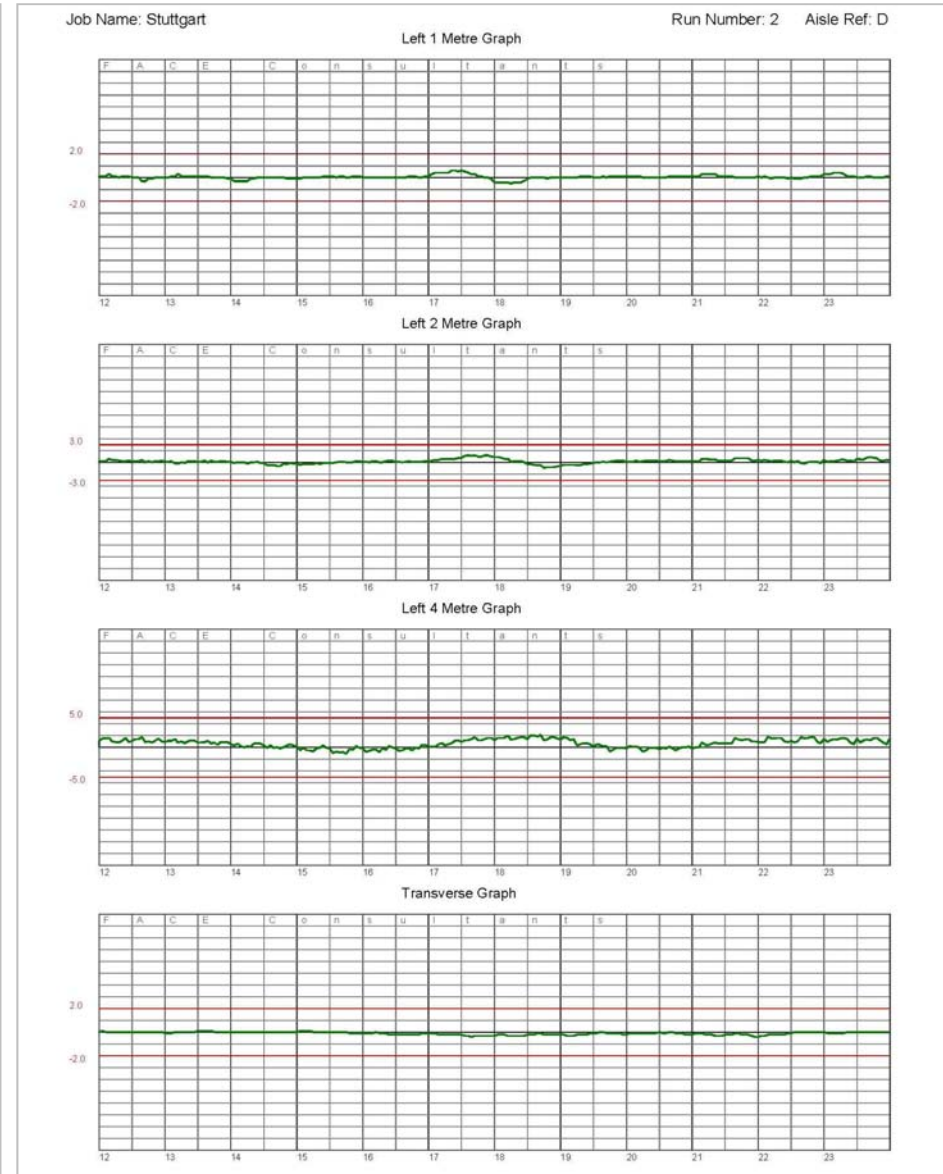
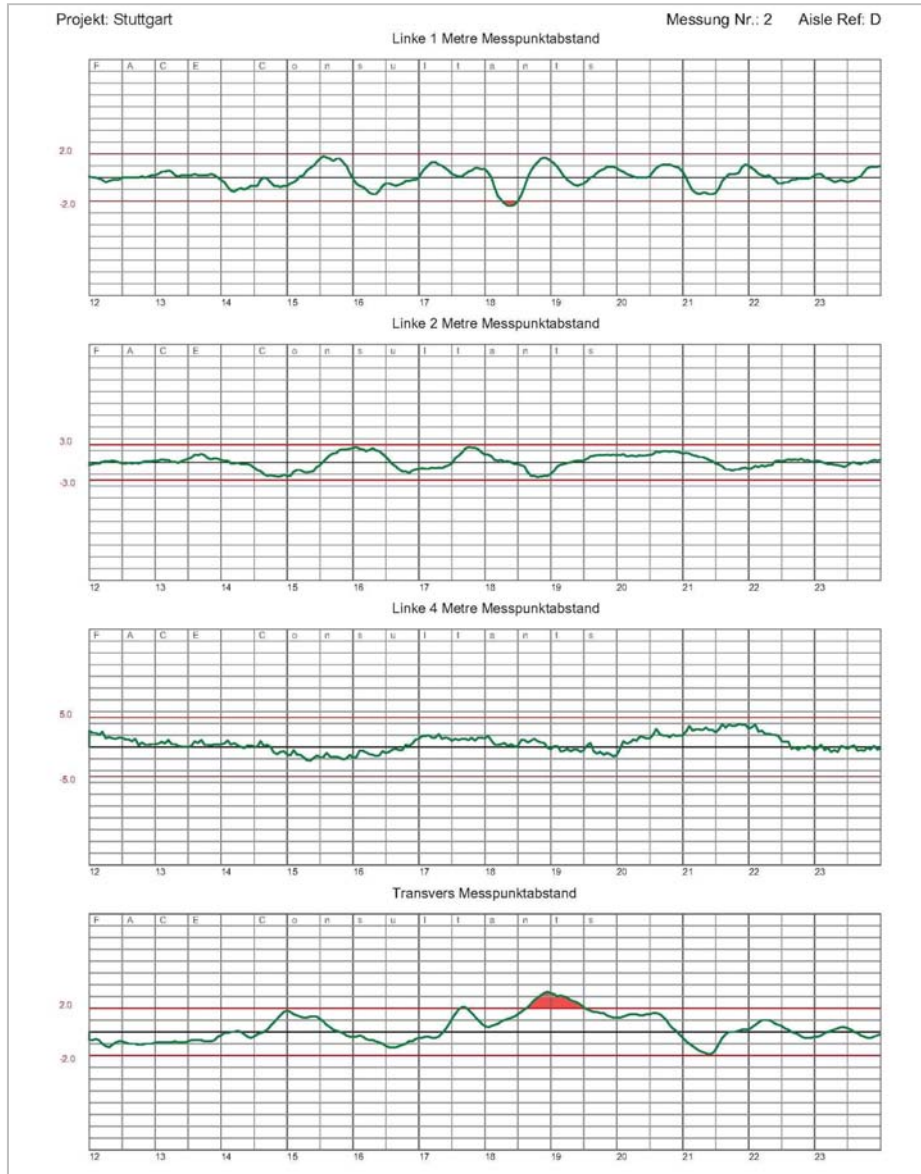
The addition of Laser Grinder® XPT to the CoGri armoury enables CoGri to offer ultraflat floor profiles that far exceed the limits of current international standards. If all that is needed is a floor to a given floor flatness standard then the Standard Laser Grinder® is the machine for the job. If a project requires something special - an ultraflat floor to exceptionally tight tolerances, the Laser Grinder® XPT is now available.

For more information about Concrete Grinding Ltd's range of floor grinding services, please contact +44 (0) 1484 600080 or

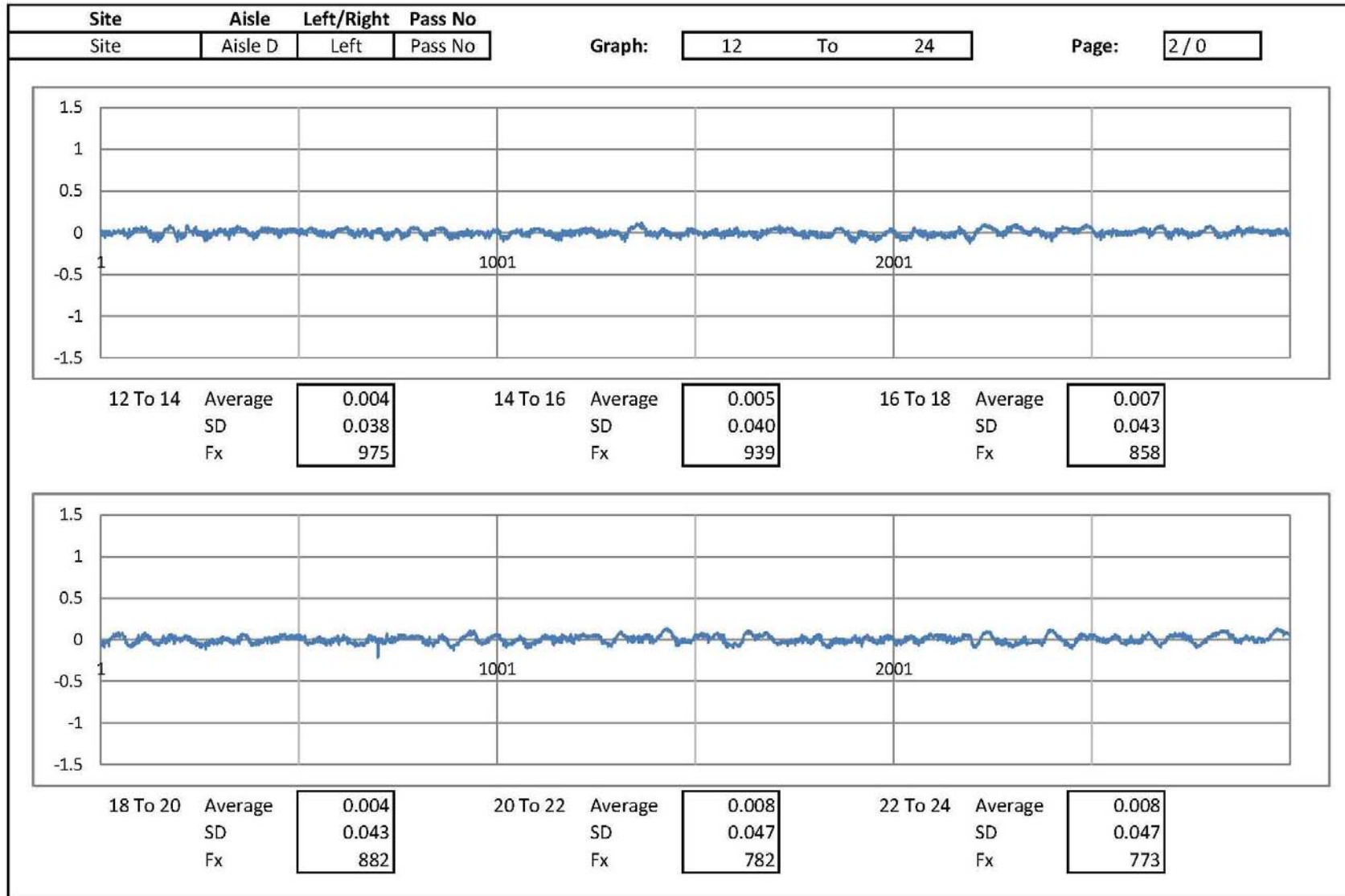
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Visit www.concrete-grinding.com

DIN 15185 >6m before (left) and after grinding (right) with the Laser Grinder® XPT - Stuttgart

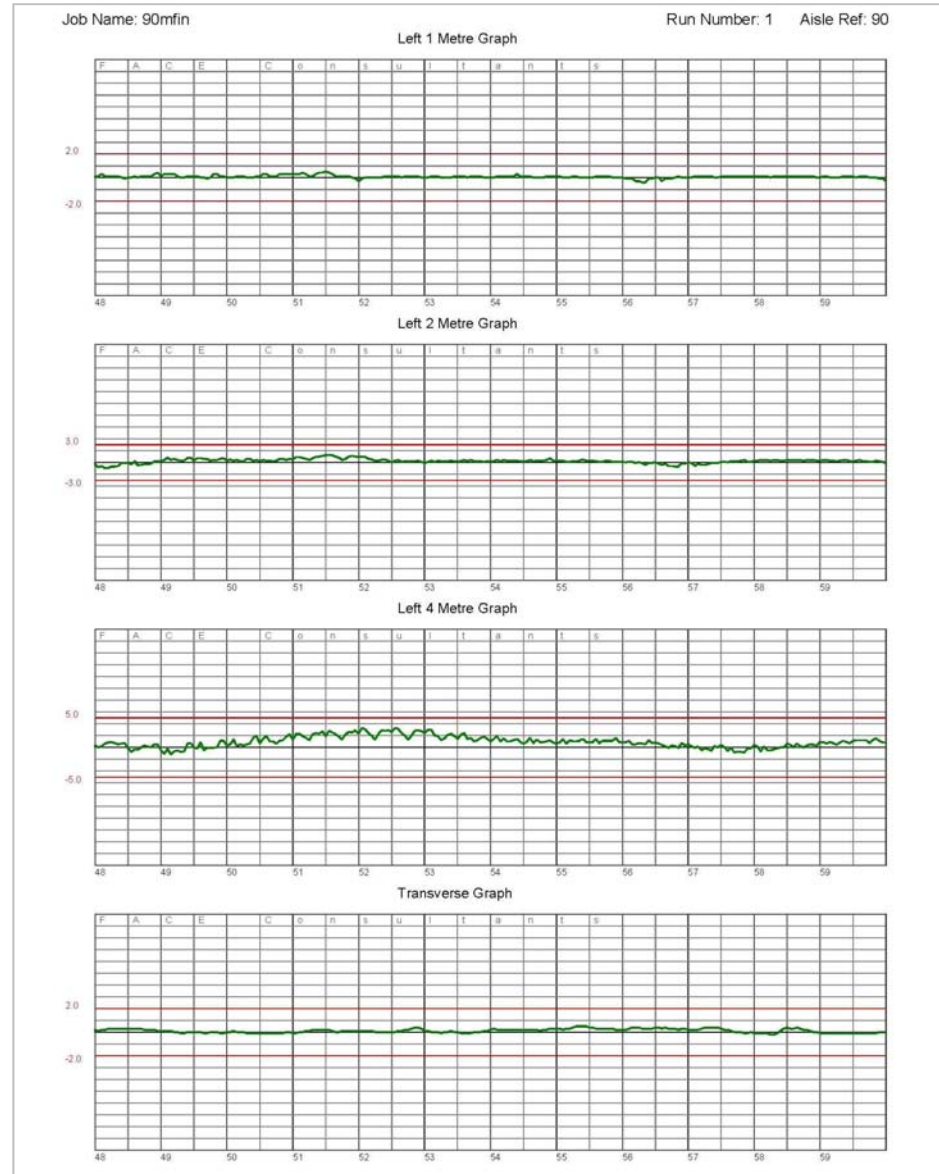
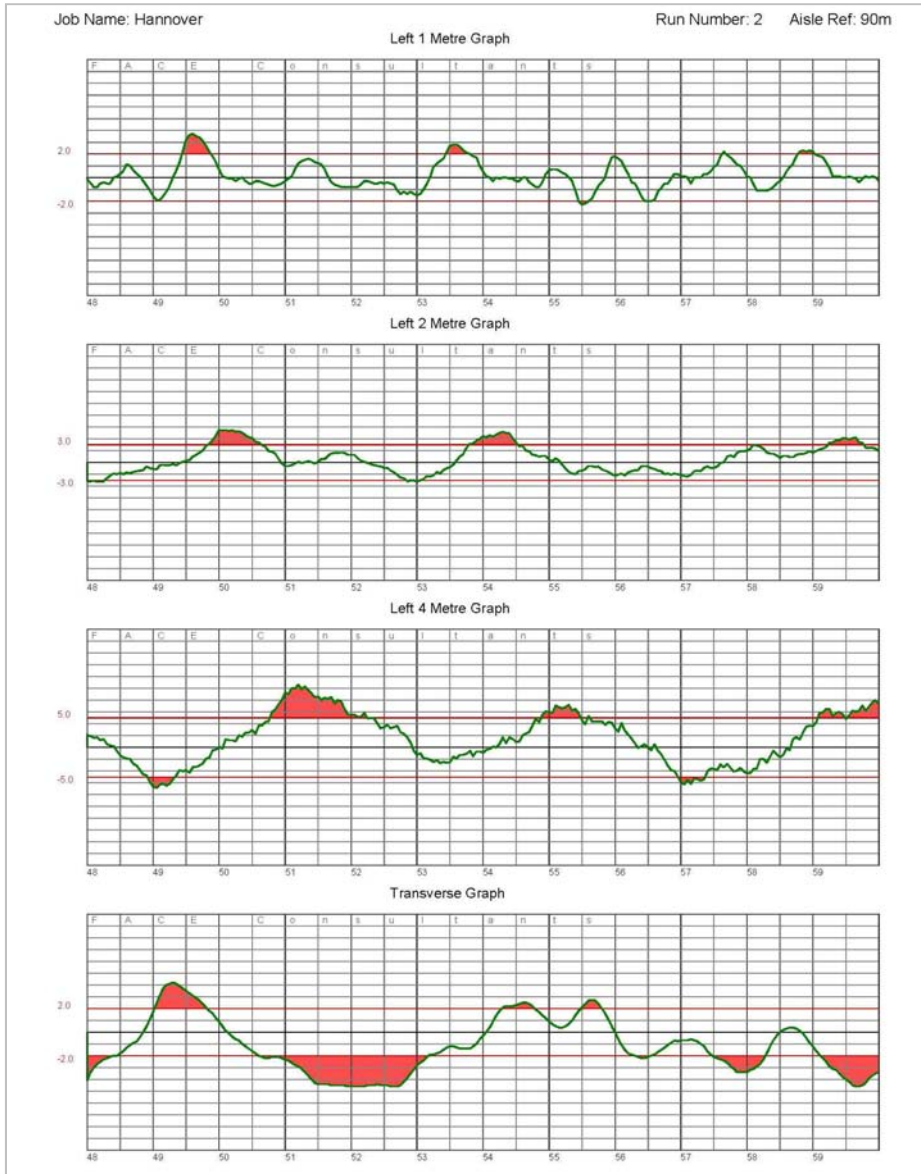


VDMA Guideline after grinding with the Laser Grinder® XPT - Stuttgart



As the racking in Stuttgart was 12 metres high, the VDMA Guideline states the Fx numbers should be above 450. As can be seen from example above, the results achieved by the Laser Grinder® XPT far exceeded this requirement.

DIN 15185 >6m before (left) and after grinding (right) with the Laser Grinder® XPT - Hannover



VDMA Guideline after grinding with the Laser Grinder® XPT - Hannover

