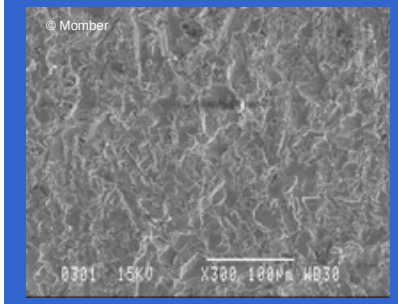
# Seminar

Blast cleaning was invented in 1870 by Benjamin Tilghman. Since that, this surface preparation method has found its way into many industrial areas. One of the most important applications for blast cleaning is the surface preparation prior to the application of protective coatings and linings. Here, blast cleaning, in its various versions, is still the dominating method. It is utilised for the treatment of bridges, ships, offshore structures, towers, tanks, etc.



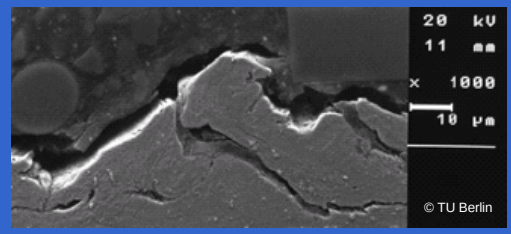

Blast cleaned
Steel substrate


Blast cleaning of an
external surface

# Industrial Blast Cleaning

Blast cleaning is considered a „simple“ method. This is not true if the fundamentals of this method are taken into account. The equipment is comparably simple, but blast cleaning is a complex and demanding process. Although the method is more than 130 years old, it is still an empirically controlled process. This statement is true in particular for field applications, and it applies to tasks like nozzle type and size assessment, abrasive selection, pressure drop, parameter optimisation, etc.


Wettability test (contact angle)




Cross section of a blast cleaned steel plate

# Features


**Content**
Industrial applications
Equipment and tools
Process optimisation
Material removal processes
Pressure drop
Power and energy assessment
Nozzle selection
Wear

The seminar considers the state-of-the-art of research and of application practice.

**Location**
The seminar is designed to take part in your company.

**Costs**
The costs depend on number of attendees and on location.

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# 1-Day Seminar - Industrial Blast Cleaning

09:00 a.m. Welcome and introduction

09:15 a.m. The physics of compressed air
- Pressure
- Density
- Temperature
- Standards

09:45 a.m. Nozzle types and evaluation
- Cylindrical nozzles
- Laval nozzles
- Mass flow rate
- Air velocity
- Working line
- Design considerations

10:14 a.m. Break

10:30 a.m. Abrasive acceleration
- Simple model
- Effect of air pressure
- Effect of particle size
- Effect of abrasive type

11:15 a.m. Compressor calculation
- Power consumption
- Air temperature
- Working line

Noon Break

00:30 p.m. Process optimisation
- Pressure
- Nozzle diameter
- Stand-off distance
- Abrasive mass flow rate
- Abrasive type and size
- Impact angle

01:30 p.m. Nozzle wear
- Effects on efficiency
- Wear rates
- Material selection

02:00 p.m. Break

02:15 p.m. Pressure loss in hoses
- Flow velocity
- Expansion
- Friction coefficient
- Loss calculations
- Grit effects

03:00 p.m. Surface Quality
- Cleanliness
- Dust
- Profile
- Adhesion

04:00 p.m. FINI

# Lecturer

Dr. Andreas Momber

Certified Coating Inspector.

Process engineer by education (Dipl.-Ing. Weimar University). Ph.D. in the area of concrete technology (Dr.-Ing., Leipzig University of Technology). Habilitation in the area of tribology and wear (Dr.-habil., RWTH Aachen). Lecturer at the Faculty of Geo-Resources and Materials Technology, RWTH Aachen.
Extensive practical experience as an application engineer of a leading manufacturer of surface processing technique and as an R&D coordinator of a large contractor.
Stays at R&D institutions in Germany, the USA and Australia. Guest Lecturer at the University of Cambridge, UK.
Numerous honours and fellowships, e.g. DFG, Alexander-von-Humboldt Foundation, DAAD, New York Academy of Sciences, SSPC, NACE.
Author of six monographs and ca. 200 journal and conference papers and presentations world-wide.
2005 and 2007: Editor Award “Journal of Protective Coatings and Linings”.
Referee to engineering organisations, publishers and scientific journals. Active member in national and international societies and bodies, e.g.. STG, GfKORR DIN, ISO, NACE, SSPC.