Abrasive Blasting with Post-Process and In-Situ Characterization

Robert Jeffrey Mills

Thesis submitted to the faculty of the Virginia Polytechnic Institute and State University in partial fulfillment of the requirements for the degree of

Master of Science
In
Materials Science and Engineering

Gary R. Pickrell, Chair
Daniel S. Homa
Alan P. Druschitz
Thomas W. Staley

May 29, 2014
Blacksburg, VA

Keywords: (abrasive blasting, media, substrate, roughness, profilometry, temperature, optical fibers.)

Copyright 2014, Robert J. Mills
Robert,

Please see Gavin’s email below per your request. Feel free to send us your info for any future inquiries.

Regards,

Bryan Gerber | Product Specialist
Tel 614-476-3000 Fax 614-476-6939 Email bryan.gerber@blast-one.com Web www.blast-one.com
North American Head Office, 2400 Landmark Way, Columbus OHIO, 43219 USA.

“Our goal is to be the most trusted, experienced and referred to company in the Global Corrosion Control Industry”.

From: Gavin Gooden
Sent: Thursday, May 8, 2014 8:30 AM
To: Erik James
Subject: RE: New Contact Request!

I have no problem him using the pictures in his Thesis...
He might also be interested in our weekly tips http://www.blast-one.com/weekly-tips
Especially these; http://www.blast-one.com/weekly-tips/the-difference-between-surface-profile-and-class-of-blast
http://www.blast-one.com/pdfs/Difference_between_Surface_profile_and_Class_of_Blast.pdf
I’d be very interested in hearing more about his thesis, and if the university does research projects into abrasive blasting....

Cheers!

Regards,

Gavin Gooden | VP Marketing – North America
NACE Coating Inspector Level 1 Cert # 46529
Tel 614 476-3000 Fax 614 476-6939 Email gavin.gooden@blast-one.com Web www.blast-one.com
North American Head Office, 2400 Landmark Way, Columbus OHIO, 43219 USA.

Legal Disclaimer: This email may contain confidential information. If you are not the intended recipient, you must not disclose or use the information contained in it. If you have received this email in error, please notify us immediately by return email and delete the document.

We have received your request containing following information.

Virginia Tech
Robert Mills
rjmills@vt.edu
4343346900
24060
Hi Blast-One,

My name is Robert Mills and I'm currently working on a master's thesis related to grit blasting. The title of my thesis is, "Abrasive Blasting with Post Process and In-Situ Characterization." I'm sending this email to ask permission to use the "Understanding Surface Profile" image on the following link of your website:

http://www.blast-one.com/technical-information/surface-preparation/understanding-surface-profile

May I use this image with your permission in my thesis (the thesis will be published as well)?

Thanks for your time.

Table 2-1 [5, used with permission]
Mrometer A. Blast Cleaning Technology: Chapter 1: Introduction, 2008., p. 3.
http://vt.summon.serialssolutions.com/link/0/eLyHCMwY2BQSDK1MDBNTgFmnETTFHNg g98C2OplArZdjUxSk9PSTF2vCOV5m6iDGZuriHOHrqwOcn4AsiRC_GISXxz0LyZrimwvQ qsWE3iQav0jQzFGHgTQQvC80rAG8dS-J14LvXUxfmgmLD09V8peRo3AOU_KUc (accessed March 31, 2013) Used with permission from Copyright Clearance Center; letter attached.

Figure 2.3 [8, used with permission]
http://vt.summon.serialssolutions.com/link/0/eLyHCMwY2BQSDK1MDBNTgFmnETTFHNg g98C2OplArZdjUxSk9PSTF2vCOV5m6iDGZuriHOHrqwOcn4AsiRC_GISXxz0LyZrimwvQ qsWE3iQav0jQzFGHgTQQvC80rAG8dS-J14LvXUxfmgmLD09V8peRo3AOU_KUc (accessed March 31, 2013) Used with permission from Copyright Clearance Center; letter attached.

Figure 2.4 [11, 12 used with permission]
http://vt.summon.serialssolutions.com/link/0/eLyHCMwY2BQSDK1MDBNTgFmnETTFHNg g98C2OplArZdjUxSk9PSTF2vCOV5m6iDGZuriHOHrqwOcn4AsiRC_GISXxz0LyZrimwvQ qsWE3iQav0jQzFGHgTQQvC80rAG8dS-J14LvXUxfmgmLD09V8peRo3AOU_KUc (accessed March 31, 2013) Used with permission from Copyright Clearance Center; letter attached.

Figure 2.5 [14, used with permission]
http://vt.summon.serialssolutions.com/link/0/eLyHCMwY2BQSDK1MDBNTgFmnETTFHNg g98C2OplArZdjUxSk9PSTF2vCOV5m6iDGZuriHOHrqwOcn4AsiRC_GISXxz0LyZrimwvQ qsWE3iQav0jQzFGHgTQQvC80rAG8dS-J14LvXUxfmgmLD09V8peRo3AOU_KUc (accessed March 31, 2013) Used with permission from Copyright Clearance Center; letter attached.

Figure 2.6 [15, used with permission]
http://vt.summon.serialssolutions.com/link/0/eLyHCMwY2BQSDK1MDBNTgFmnETTFHNg g98C2OplArZdjUxSk9PSTF2vCOV5m6iDGZuriHOHrqwOcn4AsiRC_GISXxz0LyZrimwvQ qsWE3iQav0jQzFGHgTQQvC80rAG8dS-J14LvXUxfmgmLD09V8peRo3AOU_KUc (accessed March 31, 2013) Used with permission from Copyright Clearance Center; letter attached.
Order Completed
Thank you very much for your order.

This is a License Agreement between Robert J Mills ("You") and Springer ("Springer"). The license consists of your order details, the terms and conditions provided by Springer, and the payment terms and conditions.

Get the printable license.

<table>
<thead>
<tr>
<th>License Number</th>
<th>33805118013386</th>
</tr>
</thead>
<tbody>
<tr>
<td>License date</td>
<td>May 01, 2014</td>
</tr>
<tr>
<td>Licensed content</td>
<td>Springer</td>
</tr>
<tr>
<td>publisher</td>
<td>Springer eBook</td>
</tr>
<tr>
<td>Licensed content title</td>
<td>Abrasive Material</td>
</tr>
<tr>
<td>author</td>
<td>Andreas Mombert</td>
</tr>
<tr>
<td>Licensed content date</td>
<td>Jan 1, 2008</td>
</tr>
<tr>
<td>Type of Use</td>
<td>Thesis/Dissertation</td>
</tr>
<tr>
<td>Portion</td>
<td>Figures</td>
</tr>
<tr>
<td>Author of this Springer No article</td>
<td></td>
</tr>
<tr>
<td>Original figure numbers</td>
<td>Figures 2.1, 2.2, 2.7, 2.8, 2.9, 2.10, 2.13a., 2.21, 2.30, 2.31, and Table 2.10</td>
</tr>
<tr>
<td>Title of your thesis / dissertation</td>
<td>Abrasive Blasting with Post Process and In-Situ Characterization</td>
</tr>
<tr>
<td>Expected completion date</td>
<td>Jun 2014</td>
</tr>
<tr>
<td>Estimated size(pages)</td>
<td>90</td>
</tr>
<tr>
<td>Total</td>
<td>0.00 USD</td>
</tr>
</tbody>
</table>
Dear Jason,

We communicated by email on various questions I had about different problems and components of the abrasive blasting process in the past year. I’m sending you this email to ask permission to use the "Operating Principles Figure" on the following link: http://www.nortonsandblasting.com/nsbblastcab.html. My master's thesis will be titled, "Abrasive Blasting with Post-Process and In-Situ Characterization." The thesis will be possibly reprinted and published. May I have permission to use the image of "Operating Principles Figure" from the Norton Sandblasting Equipment? Thanks for your time.

Sincerely,

Robert Mills

The image you are referring to is owned by Empire Abrasive Equipment Company. We have permissions to use all their publications on our website through our distributor agreement, but I don’t believe we have the authority to give permission to a third party. I have sent them an email with your request and will let you know what they say as soon as I hear from them. Please feel free to send me a copy once you are finished, if you have any questions while you are writing it please feel free to send me an email.

Regards,
Jason Eisel
Norton Sandblasting Equipment
1006 Executive Blvd
Chesapeake, VA 23320
PH (757)548-4842  800-366-4341
Fax (757)547-9597
jeisel@nortonsandblasting.com

From: Robert Mills [mailto:rjmills@vt.edu]
Sent: Wednesday, May 14, 2014 2:41 PM
To: Jason
Subject: Re: Permissions to use images for Master's Thesis

Robert,
Please see below. John Salvetti is our Regional Sales Manager from Empire.

Regards,
Jason Eisel
Norton Sandblasting Equipment
1006 Executive Blvd
Chesapeake, VA 23320
PH (757)548-4842  800-366-4341
Fax (757)547-9597
jeisel@nortonsandblasting.com
Jason:
He is good to go. He can use the images.
John S.

Figure 2.8 [23, used with permission]
Figure 2.9  [24, used with permission]
Dear. Mr. Bidulsky,

I'm Robert Mills and I'm currently working on my master's thesis in Materials Science and Engineering at Virginia Tech. I'm sending you this email to ask permission to use the "Figure 1" from the journal article entitled, "Effect of Blasting Material on Surface Morphology of Steel Sheets." by Makova and Sopko on the following link: http://www.ams.tuke.sk/data/ams_online/2010/number2/mag06/mag06.pdf

My master's thesis will be titled, "Abrasive Blasting with Post-Process and In-Situ Characterization." The thesis will be possibly reprinted and published. May I have permission to use (re-print) the image of "Figure 2.1" from Acta Metallurgica Slovaca? Thanks for your time.

Sincerely,

Robert Mills

Dear Robert Mills,

Yes. You have permission to use the image.

Robert Bidulsky
Editor
Acta Metallurgica Slovaca
Dr. Robert Bidulsky
Technical University of Kosice
Faculty of Metallurgy
Department of Metals Forming
Vysokoskolska 4
Kosice, 042 00
Slovakia
Tel: +421 55 602 4124
http://orcid.org/0000-0002-8716-7844
http://www.researcherid.com/rid/F-2428-2010
Figure 2.13 [50, used with permission]

Figure 2.14 [50, used with permission]

Figure 2.16 [53, used with permission]

Figure 2.17 [53, used with permission]
Figure 2.19 [54, used with permission]
Figure 2.21 [56, used with permission]
Dear Mr. Moss,

I'm Robert Mills and I'm currently working on my master's thesis in Materials Science and Engineering at Virginia Tech. I'm sending you this email to ask permission to use the “Figure 1” on from the article titled, “The Basics of Surface Finish Measurement” at the following link:  
http://www.deterco.com/products/Mahr%20Federal/newsletter/finish_measure_10_19_04.htm

My master's thesis will be titled, "Abrasive Blasting with Post-Process and In-Situ Characterization." The thesis will be possibly reprinted and published. May I have permission to use the image of the skidding surface finish measurement (Figure 1) from the Mahr Federal? Thanks for your time.

Sincerely,
Robert Mills

Hello Robert,

Your email to Dan Moss was forwarded to me. You have our permission as requested to use the figure 1 in your master’s thesis if you credit it as being from an article in Quality Magazine, September 2004 by Alex Tabenkin of Mahr Federal Inc.

Best regards,

Gary Robison  
Director of Marketing and Customer Service  
Mahr Federal Inc.  
1144 Eddy Street, Providence, RI 02905, USA  
Phone: 401-784-3275, Fax: 401-784-3246  
email: gary.robinson@mahr.com  website: www.mahr.com

Dear Mr. Moss,

I'm Robert Mills and I'm currently working on my master's thesis in Materials Science and Engineering at Virginia Tech. I'm sending you this email to ask permission to use the “Figure 1” on from the article titled, “The Basics of Surface Finish Measurement” at the following link:  http://www.deterco.com/products/Mahr%20Federal/newsletter/finish_measure_10_19_04.htm

My master's thesis will be titled, "Abrasive Blasting with Post-Process and In-Situ Characterization." The thesis will be possibly reprinted and published. May I have permission to use the image of the skidding surface finish measurement (Figure 1) from the Mahr Federal? Thanks for your time.

Sincerely,
Robert Mills

Hello Robert,

Your email to Dan Moss was forwarded to me. You have our permission as requested to use the figure 1 in your master’s thesis if you credit it as being from an article in Quality Magazine, September 2004 by Alex Tabenkin of Mahr Federal Inc.

Best regards,

Gary Robison  
Director of Marketing and Customer Service  
Mahr Federal Inc.  
1144 Eddy Street, Providence, RI 02905, USA  
Phone: 401-784-3275, Fax: 401-784-3246  
email: gary.robinson@mahr.com  website: www.mahr.com

Figure 2.25 [64, used with permission]  
http://www.deterco.com/products/Mahr%20Federal/newsletter/finish_measure_10_19_04.htm
(accessed May 14, 2014) Used with permission from Mahr Federal Inc.; email attached.

Figure 2.26 [66, used with permission]  
Figure 2.27  [67, used with permission]
Dear Jason,
I'm almost done writing my master of science thesis about grit blasting. Could I get permission from Norton Sandblasting to re-print/use the “Blast Media Chart” in my thesis? Here is the link:
http://www.nortonsandblasting.com/nsbabrasives.html

Just let me know sometime soon, thanks.

Robert,
Feel free to use that chart. I would like to extend the offer to read your paper and give you any input before you submit it if you would like.

Regards,
Jason Eisel
Norton Sandblasting Equipment
1006 Executive Blvd
Chesapeake, VA 23320
PH (757)548-4842  800-366-4341
Fax (757)547-9597
jeisel@nortonsandblasting.com

Jeff, I found the figure I wanted to use. May I have permission from Kennametal Inc. to use/re-print "Figure 1. Nozzle Types" from page 9 of Abrasive Blast Nozzles Catalog in my master of science thesis? Thanks for your time and help.

Sincerely,
Robert Mills

Robert, Yes, you have our permission.

Jeff Gardner
Key Account Manager, Component & Surface Technology Solutions
Jeff.Gardner@kennametal.com
T +1 231 929 2116
M +1 231 709 0753
F +1 800 662 2132
Kennametal Inc. | 2879 Aero Park Drive | Traverse City, MI 49686 | www.kennametal.com

Table A-1 [35, used with permission]

Figure B.1 [63, used with permission]