DUST REMOVAL SYSTEM SUBMITTALS

Interior Finisher

- Self-contained drilling systems (TE 4A/6A DRS + DRS-M)
- Rotary and Combihammers with DRS-D
- Rotary hammers with DRS-S
- Combihammers with DRS-Y
- Hollow drill bits
- Breakers with DRS-B and DRS-3000
- Grinding concrete with angle grinders
- Vacuums
HILTI SUBMITTAL PACKAGE
OSHA 1926.1153 TABLE 1, SECTION vii:
Handheld and stand-mounted drills (including impact and rotary hammer drills)

Current Hilti self-contained dust collection systems:
DRS 4-A
DRS 6-A
DRS-M

For instructions on how to assemble these systems, please refer to the Hilti North America Youtube page

Onboard systems
TABLE 1 REQUIREMENTS

These systems fall under Table 1, section vii: handheld and stand-mounted drills (including impact and rotary hammer drills). In order to be Table 1 compliant, the below requirements must be met:

- Use drill equipped with commercially available shroud or cowling with dust collection system
- Operate and maintain tool in accordance with manufacturer’s instructions to minimize dust emissions
- Dust collector must provide the air flow recommended by the tool manufacturer, or greater
- Have a filter with 99% or greater efficiency and a filter-cleaning mechanism

Note: Vacuum must be equipped with a HEPA-filter when cleaning holes

Table 1 states that no respirator is required if the above controls are fully and properly implemented.

<table>
<thead>
<tr>
<th>Equipment / Task</th>
<th>Engineering and work practice control methods</th>
<th>Required respiratory protections and minimum Assigned Protection Factor (APF)</th>
<th>≤ 4 hours / shift</th>
<th>&gt; 4 hours / shift</th>
</tr>
</thead>
<tbody>
<tr>
<td>Handheld and stand-mounted drills (including impact and rotary hammer drills)</td>
<td>Use drill equipped with commercially available shroud or cowling with dust collection system. Operate and maintain tool in accordance with manufacturer’s instructions to minimize dust emissions. Dust collector must provide the air flow recommended by the tool manufacturer, or greater, and have a filter with 99% or greater efficiency and a filter-cleaning mechanism. Use a HEPA-filtered vacuum when cleaning holes.</td>
<td></td>
<td>None</td>
<td>None</td>
</tr>
<tr>
<td></td>
<td>• When used outdoors</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• When used indoors or in an enclosed area</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Check below to see how your system can be compliant with 1926.1153. To verify the generation of your tool, check the rating plate, or call Hilti at 800-879-8000 with your serial number.

<table>
<thead>
<tr>
<th>DRS module name</th>
<th>Tool name and generation</th>
<th>DRS system item number</th>
<th>Method of compliance</th>
</tr>
</thead>
<tbody>
<tr>
<td>DRS 4-A</td>
<td>TE 4-A gen 1</td>
<td>n/a</td>
<td>Exposure assessment</td>
</tr>
<tr>
<td></td>
<td>TE 4-A gen 2</td>
<td>2098490²</td>
<td>Objective data²</td>
</tr>
<tr>
<td></td>
<td>TE 6-A gen 1</td>
<td>2177080</td>
<td>Table 1/Objective data²</td>
</tr>
<tr>
<td></td>
<td>TE 6-A gen 2</td>
<td>n/a</td>
<td>Exposure assessment</td>
</tr>
<tr>
<td></td>
<td>TE 6-A gen 3</td>
<td>n/a</td>
<td>Exposure assessment</td>
</tr>
<tr>
<td></td>
<td>TE 6-A gen 4 or</td>
<td>2040914</td>
<td>Objective data</td>
</tr>
<tr>
<td>DRS 6-A</td>
<td>TE 6-A22</td>
<td>2172902</td>
<td>Table 1/Objective data²</td>
</tr>
<tr>
<td></td>
<td>TE 6 / 6-S / 7 / 7-C / TE 7-A</td>
<td>2098511²</td>
<td>Objective data³</td>
</tr>
<tr>
<td>DRS-M</td>
<td>TE 6 / 6-S / 7 / 7-C / TE 7-A</td>
<td>267769</td>
<td>Objective data³</td>
</tr>
</tbody>
</table>

1 Only DRS systems listed as “Table 1 compliant” incorporate a manual filter cleaning mechanism.
2 Can be upgraded to table 1 compliance through purchase of the compliant filter box
3 See Hilti’s published Objective Data — if not applicable to a specific application, exposure assessment is required.
SYSTEM OVERVIEW

Self-contained dust-collection systems are systems that fit on the tool and do not require a separate stand-alone vacuum to collect dust. Hilti currently offers the below systems with this configuration:

<table>
<thead>
<tr>
<th>Tool</th>
<th>Accessory</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rotary hammer TE 4-A 18 or TE 4-A 22</td>
<td>Dust removal system TE DRS 4-A</td>
</tr>
<tr>
<td>Rotary hammer TE 6-A 36</td>
<td>Dust removal system TE DRS 6-A</td>
</tr>
<tr>
<td>or Rotary hammer TE 6-A22</td>
<td></td>
</tr>
<tr>
<td>Rotary hammer TE 7 or TE 7-C</td>
<td>Dust removal system TE DRS-M</td>
</tr>
</tbody>
</table>

Note: previous generations of tools may have different item numbers or nomenclature. Check with your local Hilti representative or product instruction manual to verify.
Hilti TE 4-A/6-A with on-board dust removal system (DRS)

Hilti has performed testing of the above system to determine the operator’s respirable silica dust exposure in accordance with EN 50632-1 and EN 50632-2-6. Testing was performed under the following conditions:

- Room size: 7.8m x 7.8m x 3.3m Closed — no air exchange
- Drilled hole dimensions: ø5/8” x 2”
- Test duration: 1 hour
- Total holes drilled: 75
- Drilling orientation: overhead
- Base material: concrete
- Sampler: 10 l/min GSP pump, FSP sampler, ISO 7708-compliant, 5 μm filter
- Air sample volume collected during test: 600 liters
- Dust collection receptacle on tool emptied every 8 holes drilled

DRS module items 2098490 (TE 4A gen 2) and 2172902 (TE 6A gen 4) only

Results:

<table>
<thead>
<tr>
<th>Time-Weighted Average Respirable Silica Dust Exposure1,3</th>
<th>45 μg/m³</th>
</tr>
</thead>
</table>

1 Exception: EN 50632-2-6 specifies drilling one hundred twenty ø16mm x 50mm holes at a 15° downward-from-horizontal position.
2 The silica content of base materials varies. As a result, the silica content in respirable dust samples also varies. The above-published exposure value is based on a 20% silica content applied to the total respirable dust measurement. Measured average silica content during testing was 13.8%.
3 Exposure value represents the time-weighted average (TWA) over the 1-hour test period. Due to the test being conducted in a closed, non-ventilated room, this TWA exposure value would increase if the test duration was extended under the same conditions.
4 These test results can be applied for modules used with previous generations of tools.
HOW TO UTILIZE HILTI “OBJECTIVE DATA”

29 CFR §1926.1153(d)(2)(ii)

Performance option

Hilti has conducted testing to establish the respirable silica dust exposure (exposure level), associated with the use of various Hilti tool systems. These tests were performed in accordance with EN 50632, except the specific work configuration may vary to provide more versatile data and better address U.S. practices. The purpose of the testing was to generate “Objective Data” to be used as part of the exposure assessment requirements of 29 CFR §1926.1153(d)(2)(ii).

Per the EN standard, testing was performed for 1 hour in a 200m³ closed, non-ventilated room. Under these conditions, exposure levels increase over time. The exposure values published in Hilti’s Objective Data represent the average over the 1-hour test period (1-hour TWA). Meaning the TWA started at zero, rose to the published 1-hour value, and would continue to rise if the test were continued.

There are several underlying concepts important to applying the Objective Data to any case-specific assessment:

1. More/less work performed in a given time period will increase/decrease the exposure level.
2. Larger/smaller room size will decrease/increase the exposure level.
3. Air exchange decreases exposure levels. Specifically, a 100% air-exchange every hour (either by the work moving to a discrete area, or via sufficient air movement), means Hilti’s published 1-hour TWA exposure level is expected to conservatively represent a steady-state TWA. The conceptual basis is two-fold: air exchange would inherently reduce the published “closed room” exposure value. And sufficient air exchange to “reset” the environment every hour would keep the exposure values at that level. For reference, a typical 20”, 2500 CFM box fan would introduce 100% new air volume in Hilti’s test chamber (7,200 ft³), every 3 minutes.
4. The OSHA 50 μg/m³ Permissible Exposure Limit (PEL), is based on an 8-hour TWA. This means the exposure level as an 8-hour TWA is ≤50 μg/m³; a 4-hour TWA is ≤100 μg/m³ (assuming no exposure for the remainder of the shift); a 2-hour TWA is ≤200 μg/m³ (assuming no exposure for the remainder of the shift) etc. (time [hours] x exposure level [μg/m³] ≤ 400).

Hilti’s published Objective Data states the amount of work performed during the 1-hour test (“1-hour work”). Therefore, the respirable silica dust exposure level in any case-specific situation is expected to be below the 8-hour TWA PEL in the following conditions:

- An employee performing ≤ “1-hour work” during a shift.
- An employee performing ≤ “1-hour work” in an hour, then moving to another discrete area and performing ≤ “1-hour work” in an hour, etc., throughout an entire shift.
- An employee performing ≤ “1-hour work” each hour, in an environment with sufficient air exchange to prevent accumulation of airborne dust.

1 Hilti’s published Objective Data incorporates a silica content of 20% of the total respirable dust measurement. Site-specific silica content varies. OSHA Docket No. OSHA-2010-0034, reviewed 588 respirable dust samples from construction tasks, finding the silica content varied from <1%-50%, with an average of 9.1%.
2 Note introduction/exhaust of 100% air volume does not necessarily correlate to a 100% air exchange.
3 As long as: (1) Hilti’s published Objective Data exposure level is ≤50 μg/m³; (2) work is performed in a room with volume ≥ 200m³, and/or having adequate ventilation; and (3) site-specific respirable silica content is ≤20% of total respirable dust.
HOW TO USE THE TABLE 1 SOLUTION

Cordless rotary hammer

TE DRS OSHA

Hilti developed TE DRS dust collection system with a filter cleaning mechanism and 99% filter efficiency, compliant with OSHA 1926.1153, Table 1. The TE DRS-4-A dust box is compatible with the TE DRS-4-A and TE DRS-4-A (T1) only. The TE DRS-6-A dust box is compatible with the TE DRS-6-A and TE DRS-6-A (T1) only.

Set-up

1. Empty the TE DRS dust box, and clean and inspect the filter.
2. Attach the TE DRS module to the rotary hammer.
3. Start TE DRS vacuum by pressing tool's control switch.
4. Verify proper operation of the TE DRS vacuum, including suction at the extraction head.
   - Check for damage or leaks in the dust box, hose, and extraction head.
   - Make sure the hose extends/retracts freely.

Drilling

1. Start drilling, and allow the TE DRS to reach full speed before beginning to drill.
   - Hold the rotary hammer perpendicular to the work surface and keep the extraction head in contact with the work surface.
2. To maximize dust collection, after the hole is drilled, slowly withdraw bit from the hole, and keep the rotary hammer running until the bit is fully withdrawn.

Cleaning and maintenance

- Empty the dust box after every 5 in³ of hole drilling (e.g. after 8-10 holes 5/8 in x 2 in (16 mm x 50 mm)).
- After every 3 in³ of hole drilling (e.g. after 5 holes ø ½ in depth 3 in (ø12 mm x 76 mm)) or if suction performance decreases push the button of the cleaning mechanism 5 times in each direction.
- To minimize dust emission, either use a vacuum to clean the dust box or place the dust box in a plastic bag keeping it closed as much as possible.
- Replace the filter if the dust debris cannot be removed, or if there are any tears or leaks in the filter.
- If more-than-usual dust is emitted during drilling, inspect the TE DRS system, and clean/inspect the dust box and filter.
Section vii: Handheld and stand-mounted drills (including impact and rotary hammer drills)

Current Hilti rotary hammers that use a DRS-D shroud:
- TE 2 (and 2-S)
- TE 3-C
- TE 7
- TE 4-A 22
- TE 6-A 36
- TE 7-C
- TE 30 (and 30-C)
- TE 40-AVR
- TE 50-AVR
- TE 60-AVR
- TE 60-ATC/AVR
- TE 70-AVR
- TE 70-ATC/AVR
- TE 80-ATC/AVR

For instructions on how to assemble these systems, please refer to the Hilti North America Youtube page
TABLE 1 REQUIREMENTS

These systems fall under Table 1, section vii: **handheld and stand-mounted drills (including impact and rotary hammer drills)**. In order to be Table 1 compliant, the below requirements must be met:

- Use drill equipped with commercially available shroud or cowling with dust collection system
- Operate and maintain tool in accordance with manufacturer’s instructions to minimize dust emissions
- Dust collector must provide the air flow recommended by the tool manufacturer, or greater
- Have a filter with 99% or greater efficiency and a filter-cleaning mechanism

Note: Vacuum must be equipped with a HEPA-filter when cleaning holes

Table 1 states that no respirator is required if the above controls are fully and properly implemented.

<table>
<thead>
<tr>
<th>Equipment / Task</th>
<th>Engineering and work practice control methods</th>
<th>Required respiratory protections and minimum Assigned Protection Factor (APF)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Handheld and stand-mounted drills (including impact and rotary hammer drills)</td>
<td>Use drill equipped with commercially available shroud or cowling with dust collection system. Operate and maintain tool in accordance with manufacturer’s instructions to minimize dust emissions. Dust collector must provide the air flow recommended by the tool manufacturer, or greater, and have a filter with 99% or greater efficiency and a filter-cleaning mechanism. Use a HEPA-filtered vacuum when cleaning holes.</td>
<td>≤ 4 hours / shift</td>
</tr>
<tr>
<td></td>
<td>• When used outdoors</td>
<td>None</td>
</tr>
<tr>
<td></td>
<td>• When used indoors or in an enclosed area</td>
<td>None</td>
</tr>
</tbody>
</table>

Check below to see how your system can be compliant with 1926.1153 Table 1. To verify the generation of your tool, check the rating plate, or call Hilti at 800-879-8000 with your serial number.

<table>
<thead>
<tr>
<th>DRS module name</th>
<th>Tool name and generation</th>
<th>Vacuums (can use any)</th>
<th>Method of compliance</th>
</tr>
</thead>
<tbody>
<tr>
<td>TE 2 series</td>
<td>DRS-D</td>
<td>VC 75-1-A221</td>
<td>All Table 1 compliant</td>
</tr>
<tr>
<td>TE 3-C series</td>
<td></td>
<td>VC 125-6</td>
<td></td>
</tr>
<tr>
<td>TE 7 series</td>
<td></td>
<td>VC 125-9</td>
<td></td>
</tr>
<tr>
<td>TE 4-A 22</td>
<td></td>
<td>VC 20-U</td>
<td></td>
</tr>
<tr>
<td>TE 6-A 36</td>
<td></td>
<td>VC 40-U</td>
<td></td>
</tr>
<tr>
<td>TE 30 series</td>
<td></td>
<td>VC 40-UE</td>
<td></td>
</tr>
<tr>
<td>TE 30-A 36</td>
<td></td>
<td>VC 150-6 XE</td>
<td></td>
</tr>
<tr>
<td>TE 40-AVR</td>
<td></td>
<td>VC 150-10 XE</td>
<td></td>
</tr>
<tr>
<td>TE 50-AVR</td>
<td></td>
<td>VC 300-17 X</td>
<td></td>
</tr>
<tr>
<td>TE 60 series</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TE 70 series</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TE 80-ATC/AVR</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

---

1 Hilti’s manufacturer guidelines state that the VC-75-1-A22 can be used for cleaning and drilling extraction for TE-C drills (SDS-Plus).
SYSTEM OVERVIEW

Hilti rotary hammers with a DRS-D are Table 1 compliant through use of a dust collection shroud hooked up to a vacuum that meets Table 1 requirements. This shroud attaches to the vacuum and suctions itself to the drilling surface, the drill is then placed in the center of the DRS-D opening to start drilling.

Hilti currently offers the below systems with this configuration:

<table>
<thead>
<tr>
<th>Tool</th>
<th>Accessory</th>
<th>Vacuum (use any)</th>
</tr>
</thead>
<tbody>
<tr>
<td>TE 2 and TE 2-S</td>
<td></td>
<td>VC 75-1-A221</td>
</tr>
<tr>
<td>TE 3-C</td>
<td></td>
<td>VC 125-6</td>
</tr>
<tr>
<td>TE 3-C</td>
<td></td>
<td>VC 125-9</td>
</tr>
<tr>
<td>TE 4-A 22</td>
<td></td>
<td>VC 20-U</td>
</tr>
<tr>
<td>TE 6-A 36</td>
<td></td>
<td>VC 40-U</td>
</tr>
<tr>
<td>TE 7-A</td>
<td></td>
<td>VC 150-6 XE</td>
</tr>
<tr>
<td>TE 7-A</td>
<td></td>
<td>VC 40-UE</td>
</tr>
<tr>
<td>TE 30 and TE 30-C</td>
<td></td>
<td>VC 150-10 XE</td>
</tr>
<tr>
<td>TE 30-A 36</td>
<td></td>
<td>VC 300-17 X</td>
</tr>
<tr>
<td>TE 40-AVR</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: previous generations of tools may have different item numbers or nomenclature. Check with your local Hilti representative or product instruction manual to verify.

1 Hilti’s manufacturer guidelines state that the VC-75-1-A22 can be used for cleaning and drilling extraction for TE-C drills (SDS-Plus).
<table>
<thead>
<tr>
<th>Tool</th>
<th>Accessory</th>
<th>Vacuum (use any)</th>
</tr>
</thead>
<tbody>
<tr>
<td>TE 50-AVR</td>
<td></td>
<td></td>
</tr>
<tr>
<td>TE 60-AVR</td>
<td></td>
<td></td>
</tr>
<tr>
<td>TE 60-ATC/AVR</td>
<td></td>
<td></td>
</tr>
<tr>
<td>TE 70-AVR</td>
<td></td>
<td></td>
</tr>
<tr>
<td>TE 70-ATC/AVR</td>
<td></td>
<td></td>
</tr>
<tr>
<td>TE 80-ATC/AVR</td>
<td></td>
<td></td>
</tr>
<tr>
<td>VC 125-6</td>
<td></td>
<td>VC 125-9</td>
</tr>
<tr>
<td>VC 125-9</td>
<td></td>
<td>VC 40-U</td>
</tr>
<tr>
<td>VC 20-U</td>
<td></td>
<td>VC 40-UE</td>
</tr>
<tr>
<td>VC 150-6 XE</td>
<td></td>
<td>VC 150-10 XE</td>
</tr>
<tr>
<td>VC 150-10 XE</td>
<td></td>
<td>VC 300-17 X</td>
</tr>
<tr>
<td>VC 40-U</td>
<td></td>
<td></td>
</tr>
<tr>
<td>VC 40-UE</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: previous generations of tools may have different item numbers or nomenclature. Check with your local Hilti representative or product instruction manual to verify.
DRILLING — ROTARY HAMMER DRILLS AND COMBI-HAMMERS

TE Dust Control — OSHA

Hilti developed drilling dust collection systems with a shroud, to be attached to a Hilti vacuum with a filter cleaning mechanism and 99% filter efficiency, compliant with OSHA 1926.1153, Table 1.

Set-up

1. Attach the DRS-D to the vacuum.
2. Insert the bit. Rotate the bit in the chuck until you hear a clicking noise to verify that the bit is firmly inserted into the chuck.
3. Turn on the vacuum, making sure automatic filter cleaning is turned off.
4. Place DRS-D onto drilling surface.
5. Verify that the DRS-D is flush to the wall and has sealed itself in place.
6. Verify proper operation of the dust collection system.
   • Check for damage or leaks in the vacuum, hose, and extraction head.
   • See instructions for vacuum.
   • See instructions for vacuum.

Drilling

1. Start to drill.
   • Hold the drill perpendicular to the work surface and keep the bit in contact with the work surface inside the DRS-D.
2. To maximize dust collection, after the hole is drilled, slowly withdraw bit from the hole, and keep the drill running until the bit is fully withdrawn.

Cleaning and maintenance

• See instructions for vacuum.
Section vii: Handheld and stand-mounted drills (including impact and rotary hammer drills)

Current Hilti rotary hammers that use a DRS-S shroud:
- TE 2 (and 2-S)
- TE 3-C
- TE 7
- TE 4-A 22
- TE 6-A 36
- TE 7-C
- TE 30 (and 30-C)
- TE 40-AVR
- TE 50-AVR
- TE 60-AVR
- TE 60-ATC/AVR
- TE 70-AVR
- TE 70-ATC/AVR
- TE 80-ATC/AVR

For instructions on how to assemble these systems, please refer to the Hilti North America Youtube page.
TABLE 1 REQUIREMENTS

These systems fall under Table 1, section vii: handheld and stand-mounted drills (including impact and rotary hammer drills). In order to be Table 1 compliant, the below requirements must be met:

- Use drill equipped with commercially available shroud or cowling with dust collection system
- Operate and maintain tool in accordance with manufacturer’s instructions to minimize dust emissions
- Dust collector must provide the air flow recommended by the tool manufacturer, or greater
- Have a filter with 99% or greater efficiency and a filter-cleaning mechanism

Note: Vacuum must be equipped with a HEPA-filter when cleaning holes

Table 1 states that no respirator is required if the above controls are fully and properly implemented.

<table>
<thead>
<tr>
<th>Equipment / Task</th>
<th>Engineering and work practice control methods</th>
<th>Required respiratory protections and minimum Assigned Protection Factor (APF)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Handheld and stand-mounted drills (including impact and rotary hammer drills)</td>
<td>Use drill equipped with commercially available shroud or cowling with dust collection system. Operate and maintain tool in accordance with manufacturer’s instructions to minimize dust emissions. Dust collector must provide the air flow recommended by the tool manufacturer, or greater, and have a filter with 99% or greater efficiency and a filter-cleaning mechanism. Use a HEPA-filtered vacuum when cleaning holes.</td>
<td>≤ 4 hours / shift</td>
</tr>
<tr>
<td></td>
<td></td>
<td>&gt; 4 hours / shift</td>
</tr>
<tr>
<td></td>
<td>• When used outdoors</td>
<td>None</td>
</tr>
<tr>
<td></td>
<td>• When used indoors or in an enclosed area</td>
<td>None</td>
</tr>
</tbody>
</table>

Check below to see how your system can be compliant with 1926.1153 Table 1. To verify the generation of your tool, check the rating plate, or call Hilti at 800-879-8000 with your serial number.

<table>
<thead>
<tr>
<th>DRS module name</th>
<th>Tool name and generation</th>
<th>Vacuums (can use any)</th>
<th>Method of compliance</th>
</tr>
</thead>
<tbody>
<tr>
<td>TE 2 series</td>
<td>DRS-S (Item number 340602)</td>
<td>VC 125-6</td>
<td>All table 1 compliant</td>
</tr>
<tr>
<td>TE 3 series</td>
<td></td>
<td>VC 125-9</td>
<td></td>
</tr>
<tr>
<td>TE 4-A 22</td>
<td></td>
<td>VC 20-U</td>
<td></td>
</tr>
<tr>
<td>TE 6-A 36</td>
<td></td>
<td>VC 40-U</td>
<td></td>
</tr>
<tr>
<td>TE 30 series</td>
<td></td>
<td>VC 40-UE</td>
<td></td>
</tr>
<tr>
<td>TE 30-A 36</td>
<td></td>
<td>VC 150-6 X</td>
<td></td>
</tr>
<tr>
<td>TE 40-AVR</td>
<td></td>
<td>VC 150-10 X</td>
<td></td>
</tr>
<tr>
<td>TE 50-AVR</td>
<td></td>
<td>VC 150-6 XE</td>
<td></td>
</tr>
<tr>
<td>TE 60 series</td>
<td>Depth gauge* and DRS-S required</td>
<td>VC 150-10 XE</td>
<td></td>
</tr>
<tr>
<td>TE 70 series</td>
<td></td>
<td>VC 300-17 X</td>
<td></td>
</tr>
<tr>
<td>TE 80-ATC/AVR</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*The correct depth gauge will depend on your model of tool. For questions, check your instruction manual or call Hilti at 800-879-8000.
SYSTEM OVERVIEW

Hilti rotary hammers with a DRS-S are table 1 compliant through use of a dust collection shroud hooked up to a vacuum that meets table 1 requirements. This shroud attaches to the depth gauge on the tool, and must be purchased separately for tools with an SDS-max connection. Any Hilti rotary hammer with a depth gauge will be table 1 compliant with the DRS-S if a Hilti vacuum is used. Hilti currently offers the below systems with this configuration:

<table>
<thead>
<tr>
<th>Tool</th>
<th>Accessory</th>
<th>Vacuum (use any)</th>
</tr>
</thead>
<tbody>
<tr>
<td>TE 2 and TE 2-S</td>
<td></td>
<td>VC 125-6</td>
</tr>
<tr>
<td>TE 3-C</td>
<td></td>
<td>VC 125-9</td>
</tr>
<tr>
<td>TE 7 and TE 7-C</td>
<td></td>
<td>VC 20-U</td>
</tr>
<tr>
<td>TE 4-A 22</td>
<td></td>
<td>VC 150-6 X</td>
</tr>
<tr>
<td>TE 6-A 36</td>
<td></td>
<td>VC 150-6 XE</td>
</tr>
<tr>
<td>TE 7-A</td>
<td></td>
<td>VC 40-U</td>
</tr>
<tr>
<td>TE 30 and TE 30-C</td>
<td></td>
<td>VC 150-10 X</td>
</tr>
<tr>
<td>TE 30-A 36</td>
<td></td>
<td>VC 40-UE</td>
</tr>
<tr>
<td>TE 40-AVR</td>
<td></td>
<td>VC 150-10 XE</td>
</tr>
<tr>
<td></td>
<td></td>
<td>VC 300-17 X</td>
</tr>
</tbody>
</table>

Note: previous generations of tools may have different item numbers or nomenclature. Check with your local Hilti representative or product instruction manual to verify.
<table>
<thead>
<tr>
<th>Tool</th>
<th>Accessory</th>
<th>Vacuum (use any)</th>
</tr>
</thead>
<tbody>
<tr>
<td>TE 50-AVR</td>
<td></td>
<td>VC 125-6</td>
</tr>
<tr>
<td>TE 60-AVR</td>
<td></td>
<td>VC 125-9</td>
</tr>
<tr>
<td>TE 60-ATC/AVR</td>
<td></td>
<td>VC 20-U</td>
</tr>
<tr>
<td>TE 70-AVR</td>
<td></td>
<td>VC 150-6 X</td>
</tr>
<tr>
<td>TE 70-ATC/AVR</td>
<td></td>
<td>VC 150-6 X E</td>
</tr>
<tr>
<td>TE 80-ATC/AVR</td>
<td></td>
<td>VC 150-10 X</td>
</tr>
<tr>
<td></td>
<td>Depth gauge (sold separately)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>DRS-S</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>VC 150-10 X E</td>
</tr>
<tr>
<td></td>
<td></td>
<td>VC 300-17 X</td>
</tr>
</tbody>
</table>

Note: previous generations of tools may have different item numbers or nomenclature. Check with your local Hilti representative or product instruction manual to verify.
DRILLING — ROTARY HAMMER DRILLS AND COMBI-HAMMERS

TE Dust Control — OSHA

Hilti developed drilling dust collection systems with a shroud, to be attached to a Hilti vacuum with a filter cleaning mechanism and 99% filter efficiency, compliant with OSHA 1926.1153, Table 1.

Set-up

1. Attach the appropriate dust collection shroud to the drill.
2. Insert the bit. Rotate the bit in the chuck until you hear a clicking noise to verify that the bit is firmly inserted into the chuck.
3. Choose the correct collector based on the system and insert being used.
4. Set the proper depth using the depth gauge mechanism on the shroud. This will either be a depth gauge rod (DRS-Y, hollow drill bits) or a set of tabbed stops (DRS 4-A/6-A/M, DRS-S)
5. Verify that the bit is flush or below the surface of the dust collection device. Note that for the DRS-Y, with 24" bits, the bit will extend approximately 1” beyond the shroud.
6. Make sure that drilling shroud extends and retracts freely.
7. Start vacuum.
8. Verify proper operation of the dust collection system, including suction at the extraction head.
   • Check for damage or leaks in the vacuum, hose, and extraction head.
   • See instructions for vacuum.

Drilling

1. Start the vacuum before beginning to drill.
   • Hold the drill perpendicular to the work surface and keep the extraction head in contact with the work surface.
2. To maximize dust collection, after the hole is drilled, slowly withdraw bit from the hole, and keep the drill running until the bit is fully withdrawn.

Cleaning and maintenance

• See instructions for vacuum.
Section x: Jackhammers and handheld powered chipping tools

Section vii: Handheld and stand-mounted drills (including impact and rotary hammer drills)

Current Hilti SDS-max rotary hammers that use a DRS-Y shroud:
- TE 50-AVR
- TE 60-AVR
- TE 60-ATC/AVR
- TE 70-AVR
- TE 70-ATC/AVR
- TE 80-ATC/AVR

For instructions on how to assemble these systems, please refer to the Hilti North America Youtube page.
TABLE 1 REQUIREMENTS

These systems fall under table 1, section x: jackhammers and handheld powered chipping tools and section vii: handheld and stand-mounted drills (including impact and rotary hammer drills). In order to be table 1 compliant, the below requirements must be met:

### Options for chiseling applications
- Use tool with water delivery system that supplies a continuous stream or spray of water at the point of impact

### Options for drilling or chiseling applications
- Use tool equipped with commercially available shroud or cowling with dust collection system
- Operate and maintain tool in accordance with manufacturer’s instructions to minimize dust emissions
- Dust collector must provide the air flow recommended by the tool manufacturer, or greater
- Have a filter with 99% or greater efficiency and a filter-cleaning mechanism

Note: Vacuum must be equipped with a HEPA-filter when cleaning holes

Table 1 requires a respirator to be worn in certain environments based on the time of the application. Check below to see when an APF 10 respirator must be worn.

<table>
<thead>
<tr>
<th>Equipment / Task</th>
<th>Engineering and work practice control methods</th>
<th>Required respiratory protections and minimum Assigned Protection Factor (APF)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Handheld and stand-mounted drills (including impact and rotary hammer drills)</td>
<td>Use drill equipped with commercially available shroud or cowling with dust collection system. Operate and maintain tool in accordance with manufacturer’s instructions to minimize dust emissions. Dust collector must provide the air flow recommended by the tool manufacturer, or greater, and have a filter with 99% or greater efficiency and a filter-cleaning mechanism. Use a HEPA-filtered vacuum when cleaning holes.</td>
<td>≤ 4 hours / shift</td>
</tr>
<tr>
<td></td>
<td>• When used outdoors</td>
<td>None</td>
</tr>
<tr>
<td></td>
<td>• When used indoors or in an enclosed area</td>
<td>None</td>
</tr>
<tr>
<td>Jackhammers and handheld powered chipping tools</td>
<td>Use tool with water delivery system that supplies a continuous stream or spray of water at the point of impact.</td>
<td>≤ 4 hours / shift</td>
</tr>
<tr>
<td></td>
<td>• When used outdoors</td>
<td>None</td>
</tr>
<tr>
<td></td>
<td>• When used indoors or in an enclosed area</td>
<td>APF 10</td>
</tr>
</tbody>
</table>

OR

|                                                                 | Use tool equipped with commercially available shroud and dust collection system. Operate and maintain tool in accordance with manufacturer’s instructions to minimize dust emissions. Dust collector must provide the air flow recommended by the tool manufacturer, or greater, and have a filter with 99% or greater efficiency and a filter-cleaning mechanism. | ≤ 4 hours / shift | > 4 hours / shift |
|                                                                 | • When used outdoors                                                                                                                                                 | None                                                                              | APF 10 |
|                                                                 | • When used indoors or in an enclosed area                                                                                                                                 | APF 10                                                                             | APF 10 |
Check below to see how your system can be compliant with 1926.1153 Table 1. To verify the generation of your tool, check the rating plate, or call Hilti at 800-879-8000 with your serial number. To check fit of the DRS-Y with older tool generations, check the sticker on the inside of the case on the DRS-Y, or refer to the instruction manual.

<table>
<thead>
<tr>
<th>Tool models*</th>
<th>Accessory</th>
<th>Vacuums (can use any)</th>
<th>Method of compliance</th>
</tr>
</thead>
<tbody>
<tr>
<td>TE 50</td>
<td>DRS-Y</td>
<td>VC 125-6</td>
<td>All table 1 compliant</td>
</tr>
<tr>
<td>TE 50-AVR</td>
<td></td>
<td>VC 125-9</td>
<td></td>
</tr>
<tr>
<td>TE 60</td>
<td></td>
<td>VC 20-U</td>
<td></td>
</tr>
<tr>
<td>TE 60-AVR</td>
<td></td>
<td>VC 40-U</td>
<td></td>
</tr>
<tr>
<td>TE 60-ATC/AVR</td>
<td></td>
<td>VC 40-UE</td>
<td></td>
</tr>
<tr>
<td>TE 70</td>
<td></td>
<td>VC 150-6 X</td>
<td></td>
</tr>
<tr>
<td>TE 70-AVR</td>
<td></td>
<td>VC 150-10 X</td>
<td></td>
</tr>
<tr>
<td>TE 70-ATC/AVR</td>
<td></td>
<td>VC 150-6 XE</td>
<td></td>
</tr>
<tr>
<td>TE 80</td>
<td></td>
<td>VC 150-10 XE</td>
<td></td>
</tr>
<tr>
<td>TE 80-ATC/AVR</td>
<td></td>
<td>VC 300-17 X</td>
<td></td>
</tr>
</tbody>
</table>

**SYSTEM OVERVIEW**

Hilti SDS-max rotary hammers are table 1 compliant for both drilling and chiseling applications through use of a dust collection shroud hooked up to a vacuum that meets table 1 requirements. Hilti currently offers the below systems with this configuration:

Note: previous generations of tools may have different item numbers or nomenclature. Check with your local Hilti representative or product instruction manual to verify
TE Dust Control — OSHA

Hilti developed drilling dust collection systems with a shroud, to be attached to a Hilti vacuum with a filter cleaning mechanism and 99% filter efficiency, compliant with OSHA 1926.1153, Table 1.

Set-up

1. Attach the appropriate dust collection shroud to the drill.
2. Insert the bit. Rotate the bit in the chuck until you hear a clicking noise to verify that the bit is firmly inserted into the chuck.
3. Choose the correct collector based on the system and insert being used.
4. Set the proper depth using the depth gauge mechanism on the shroud. This will either be a depth gauge rod (DRS-Y, hollow drill bits) or a set of tabbed stops (DRS 4-A/6-A/M, DRS-S). A depth gauge is not needed on the DRS-Y when using the attachments for chiseling.
5. Verify that the bit is flush or below the surface of the dust collection device. Note that for the DRS-Y, with 24" bits, the bit will extend approximately 1" beyond the shroud. When chiseling with the DRS-Y, the chisel will extend beyond the head of the chiseling shroud to allow the insert to chisel.
6. When drilling, make sure that drilling shroud extends and retracts freely.
7. Start vacuum.
8. Verify proper operation of the dust collection system, including suction at the extraction head
   • Check for damage or leaks in the vacuum, hose, and extraction head.
   • See instructions for vacuum.

Drilling

1. Start the vacuum before beginning to drill.
   • Hold the drill perpendicular to the work surface and keep the extraction head in contact with the work surface.
2. To maximize dust collection, after the hole is drilled, slowly withdraw bit from the hole, and keep the drill running until the bit is fully withdrawn.

Cleaning and maintenance

• See instructions for vacuum.
Section vii: Handheld and stand-mounted drills (including impact and rotary hammer drills)

All Hilti hollow drill bits:
- TE-CD (SDS+)
- TE-YD (SDS-max)

For instructions on how to assemble these systems, please refer to the Hilti North America Youtube page
TABLE 1 REQUIREMENTS

These systems fall under table 1, section vii: handheld and stand-mounted drills (including impact and rotary hammer drills). In order to be table 1 compliant, the below requirements must be met:

- Use drill equipped with commercially available shroud or cowling with dust collection system
- Operate and maintain tool in accordance with manufacturer’s instructions to minimize dust emissions
- Dust collector must provide the air flow recommended by the tool manufacturer, or greater
- Have a filter with 99% or greater efficiency and a filter-cleaning mechanism

Note: Vacuum must be equipped with a HEPA-filter when cleaning holes. No HEPA filter needed when utilizing Hilti hollow drill bits within a Hilti SafeSet system

Table 1 states that no respirator is required if the above controls are fully and properly implemented.

<table>
<thead>
<tr>
<th>Equipment / Task</th>
<th>Engineering and work practice control methods</th>
<th>Required respiratory protections and minimum Assigned Protection Factor (APF)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Handheld and stand-mounted drills</td>
<td>Use drill equipped with commercially available shroud or cowling with dust collection system. Operate and maintain tool in accordance with manufacturer’s instructions to minimize dust emissions. Dust collector must provide the air flow recommended by the tool manufacturer, or greater, and have a filter with 99% or greater efficiency and a filter-cleaning mechanism. Use a HEPA-filtered vacuum when cleaning holes.</td>
<td>≤ 4 hours / shift</td>
</tr>
<tr>
<td>(including impact and rotary hammer drills)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• When used outdoors</td>
<td>None</td>
</tr>
<tr>
<td></td>
<td>• When used indoors or in an enclosed area</td>
<td>None</td>
</tr>
</tbody>
</table>

Check below to see how your system can be compliant with 1926.1153 Table 1.

<table>
<thead>
<tr>
<th>Tool models</th>
<th>Accessory</th>
<th>Vacuums (can use any)</th>
<th>Method of compliance</th>
</tr>
</thead>
<tbody>
<tr>
<td>TE 2 series</td>
<td></td>
<td>VC 125-6</td>
<td></td>
</tr>
<tr>
<td>TE 3-C series</td>
<td></td>
<td>VC 125-9</td>
<td></td>
</tr>
<tr>
<td>TE 7 series</td>
<td></td>
<td>VC 20-U</td>
<td></td>
</tr>
<tr>
<td>TE 4-A 22</td>
<td>Any TE-CD drill bit</td>
<td>VC 40-U</td>
<td></td>
</tr>
<tr>
<td>TE 6-A 36</td>
<td></td>
<td>VC 40-UE</td>
<td></td>
</tr>
<tr>
<td>TE 30 series</td>
<td></td>
<td>VC 150-6 X</td>
<td></td>
</tr>
<tr>
<td>TE 40-AVR</td>
<td></td>
<td>VC 150-10 X</td>
<td>All table 1 compliant</td>
</tr>
</tbody>
</table>

TE 50-AVR
TE 60 series
TE 70 series
TE 80-ATC/AVR

Any TE-YD drill bit

VC 150-6 XE
VC 150-10 XE
VC 300-17 X
SYSTEM OVERVIEW

Hilti rotary hammers with a hollow drill bit are table 1 compliant through use of a hollowed out drill bit hooked up to a vacuum that meets table 1 requirements. Hilti currently offers the below systems with this configuration:

<table>
<thead>
<tr>
<th>Tool</th>
<th>Accessory</th>
<th>Vacuum (use any)</th>
</tr>
</thead>
<tbody>
<tr>
<td>TE 2-A 18</td>
<td></td>
<td>VC 125-6</td>
</tr>
<tr>
<td>TE 2 and TE 2-S</td>
<td></td>
<td>VC 125-9</td>
</tr>
<tr>
<td>TE 3-C</td>
<td></td>
<td>VC 20-U</td>
</tr>
<tr>
<td>TE 7 and TE 7-C</td>
<td></td>
<td>VC 150-6 X</td>
</tr>
<tr>
<td>TE 4-A 22</td>
<td></td>
<td>VC 150-6 XE</td>
</tr>
<tr>
<td>TE 6-A 36</td>
<td></td>
<td>VC 40-U</td>
</tr>
<tr>
<td>TE 7-A</td>
<td></td>
<td>VC 150-10 X</td>
</tr>
<tr>
<td>TE 30 and TE 30-C</td>
<td></td>
<td>VC 40-UE</td>
</tr>
<tr>
<td>TE 30-A 36</td>
<td></td>
<td>VC 150-10 XE</td>
</tr>
<tr>
<td>TE 40-AVR</td>
<td></td>
<td>VC 300-17 X</td>
</tr>
</tbody>
</table>

Note: previous generations of tools may have different item numbers or nomenclature. Check with your local Hilti representative or product instruction manual to verify.
<table>
<thead>
<tr>
<th>Tool</th>
<th>Accessory</th>
<th>Vacuum (use any)</th>
</tr>
</thead>
<tbody>
<tr>
<td>TE 50-AVR</td>
<td>VC 125-6</td>
<td>VC 125-9</td>
</tr>
<tr>
<td>TE 60-AVR</td>
<td>VC 150-6 X</td>
<td>VC 20-U</td>
</tr>
<tr>
<td>TE 60-ATC/AVR</td>
<td>VC 150-6 XE</td>
<td>VC 150-10 X</td>
</tr>
<tr>
<td>TE 70-AVR</td>
<td>VC 150-10 X</td>
<td>VC 150-10 XE</td>
</tr>
<tr>
<td>TE 70-ATC/AVR</td>
<td>VC 150-10 X</td>
<td>VC 40-U</td>
</tr>
<tr>
<td>TE 80-ATC/AVR</td>
<td>VC 150-10 X</td>
<td>VC 40-UE</td>
</tr>
</tbody>
</table>

Note: previous generations of tools may have different item numbers or nomenclature. Check with your local Hilti representative or product instruction manual to verify.
Jackhammers and handheld powered chipping tools

Current Hilti breakers with dust control solutions:
TE 500-AVR (DRS-B)
TE 700-AVR (DRS-B)
TE 800-AVR (DRS-B)
TE 1000-AVR (DRS-B)
TE 1500-AVR (DRS-B)
TE 2000-AVR (DRS-B)
TE 3000-AVR (DRS 3000)

For instructions on how to assemble these systems, please refer to the Hilti North America Youtube page

DRS-B
TABLE 1 REQUIREMENTS

These systems fall under Table 1, section x: jackhammers and handheld powered chipping tools. In order to be Table 1 compliant, the below requirements must be met:

- Use tool with water delivery system that supplies a continuous stream or spray of water at the point of impact
  or
- Use tool equipped with commercially available shroud or cowling with dust collection system
- Operate and maintain tool in accordance with manufacturer’s instructions to minimize dust emissions
- Dust collector must provide the air flow recommended by the tool manufacturer, or greater
- Have a filter with 99% or greater efficiency and a filter-cleaning mechanism

Table 1 requires a respirator to be worn in certain environments based on the time of the application. Check below to see when an APF 10 respirator must be worn.

<table>
<thead>
<tr>
<th>Equipment / Task</th>
<th>Engineering and work practice control methods</th>
<th>Required respiratory protections and minimum Assigned Protection Factor (APF)</th>
</tr>
</thead>
<tbody>
<tr>
<td>(x) Jackhammers and handheld powered chipping tools</td>
<td>Use tool with water delivery system that supplies a continuous stream or spray of water at the point of impact.</td>
<td>≤ 4 hours / shift</td>
</tr>
<tr>
<td></td>
<td>• When used outdoors</td>
<td>None</td>
</tr>
<tr>
<td></td>
<td>• When used indoors or in an enclosed area</td>
<td>APF 10</td>
</tr>
<tr>
<td></td>
<td>OR</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Use tool equipped with commercially available shroud and dust collection system.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Operate and maintain tool in accordance with manufacturer’s instructions to minimize dust emissions.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Dust collector must provide the air flow recommended by the tool manufacturer, or greater, and have a filter with 99% or greater efficiency and a filter-cleaning mechanism.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• When used outdoors</td>
<td>None</td>
</tr>
<tr>
<td></td>
<td>• When used indoors or in an enclosed area</td>
<td>APF 10</td>
</tr>
</tbody>
</table>

Check below to see how your system can be compliant with 1926.1153 Table 1. To verify the generation of your tool, check the rating plate, or call Hilti at 800-879-8000 with your serial number. To check fit of the DRS-B with older tool generations, check the sticker on the inside of the case on the DRS-B, or refer to the instruction manual.
## SYSTEM OVERVIEW

Hilti combihammers, hammers, and breakers are Table 1 compliant through use of a dust collection shroud hooked up to a vacuum that meets Table 1 requirements. Hilti currently offers the below systems with this configuration:

<table>
<thead>
<tr>
<th>Tool</th>
<th>Accessory</th>
<th>Vacuum (use any)</th>
</tr>
</thead>
<tbody>
<tr>
<td>TE 500-AVR</td>
<td></td>
<td></td>
</tr>
<tr>
<td>TE 700-AVR</td>
<td></td>
<td></td>
</tr>
<tr>
<td>TE 800-AVR</td>
<td></td>
<td></td>
</tr>
<tr>
<td>TE 1000-AVR</td>
<td></td>
<td></td>
</tr>
<tr>
<td>TE 1500-AVR</td>
<td></td>
<td></td>
</tr>
<tr>
<td>TE 2000-AVR</td>
<td></td>
<td></td>
</tr>
<tr>
<td>TE 3000-AVR</td>
<td></td>
<td></td>
</tr>
<tr>
<td>TE DR S 3000</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: previous generations of tools may have different item numbers or nomenclature. Check with your local Hilti representative or product instruction manual to verify.
HILTI SUBMITTAL PACKAGE
OSHA 1926.1153 TABLE 1, SECTION xii

Sections xii: Handheld grinders for uses other than mortar removal

Current Hilti angle grinders with a Hilti grinding hood:
AG 450-7S
AG 450-7D
DEG 500
DAG 500-D
DCG 500-S
AG 500-11S
AG 500-12D
DG 150

For instructions on how to assemble these systems, please refer to the Hilti North America Youtube page.

DG 150
Angle grinders with a grinding hood
TABLE 1 REQUIREMENTS

These systems fall under table 1, section xii: handheld grinders for use other than mortar removal. In order to be table 1 compliant, the below requirements must be met:

- When performing outdoor applications only: use a grinder equipped with integrated water delivery system that continuously feeds water to the grinding surface

or

- Use tool equipped with commercially available shroud or cowling with dust collection system
- Operate and maintain tool in accordance with manufacturer's instructions to minimize dust emissions
- Dust collector must provide the air flow recommended by the tool manufacturer, or greater
- Have a filter with 99% or greater efficiency and a filter-cleaning mechanism
- Dust collector must provide 25 cubic feet per minute (cfm) or greater of airflow per inch of wheel diameter

Table 1 requires a respirator to be worn in certain environments based on the time of the application. Check below to see when an APF 10 respirator must be worn.

<table>
<thead>
<tr>
<th>Equipment / Task</th>
<th>Engineering and work practice control methods</th>
<th>Required respiratory protections and minimum Assigned Protection Factor (APF)</th>
</tr>
</thead>
<tbody>
<tr>
<td>(xii) Handheld grinders for uses other than mortar removal</td>
<td>For tasks performed outdoors only. Use grinder equipped with integrated water delivery system that continuously feeds water to the grinding surface. Operate and maintain tool in accordance with manufacturer’s instructions to minimize dust emissions. OR Use grinder equipped with commercially available shroud and dust collection system. Operate and maintain tool in accordance with manufacturer’s instructions to minimize dust emissions. Dust collector must provide 25 cubic feet per minute (cfm) or greater of airflow per inch of wheel diameter and have a filter with 99% or greater efficiency and a cyclonic pre-separator or filter-cleaning mechanism.</td>
<td>≤ 4 hours / shift</td>
</tr>
<tr>
<td></td>
<td></td>
<td>None</td>
</tr>
<tr>
<td></td>
<td>• When used outdoors</td>
<td>None</td>
</tr>
<tr>
<td></td>
<td>• When used indoors or in an enclosed area</td>
<td>None</td>
</tr>
</tbody>
</table>
Check below to see how your system can be compliant with 1926.1153 Table 1. To verify the generation of your tool, check the rating plate, or call Hilti at 800-879-8000 with your serial number.

<table>
<thead>
<tr>
<th>Tool models</th>
<th>Accessory</th>
<th>Vacuums (can use any)</th>
<th>Method of compliance</th>
</tr>
</thead>
<tbody>
<tr>
<td>AG 450-7S AG 450-7D</td>
<td>Dust guard grinding hoods</td>
<td>VC 125-6</td>
<td>Table 1 compliant</td>
</tr>
<tr>
<td></td>
<td>(Item number 2102983)</td>
<td>VC 125-9</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>VC 20-U</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>VC 40-U</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>VC 150-6 X</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>VC 150-10 X</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>VC 150-6 XE</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>VC 150-10 XE</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>VC 300-17 X</td>
<td></td>
</tr>
<tr>
<td>DEG 500 DCG 500-S</td>
<td>Dust guard grinding hoods</td>
<td>VC 150-6 X</td>
<td>Table 1 compliant</td>
</tr>
<tr>
<td>DAG 500-D AG 500-11S</td>
<td>(Item number 267719 or Item number 2126539)</td>
<td>VC 150-10 X</td>
<td></td>
</tr>
<tr>
<td>AG 500-12D</td>
<td></td>
<td>VC 150-6 XE</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>VC 300-17 X</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>VC 125-6</td>
<td></td>
</tr>
<tr>
<td>AG 600-A 36</td>
<td>Dust guard grinding hoods</td>
<td>VC 300-17 X</td>
<td>Table 1</td>
</tr>
<tr>
<td>grinding hoods for</td>
<td>(Item number 267719 or Item number 2126539)</td>
<td>Table 1 / Objective data*</td>
<td></td>
</tr>
<tr>
<td>AG 600 are</td>
<td></td>
<td>Exposure assessment</td>
<td></td>
</tr>
<tr>
<td>designed for 5 inch</td>
<td></td>
<td>Objective data*</td>
<td></td>
</tr>
<tr>
<td>max. diameter</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>wheels only</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DG 150</td>
<td>Vacuum adapter</td>
<td>VC 125-6</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(Item number 281862)</td>
<td>VC 125-9</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>VC 150-6 X</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>VC 150-10 X</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>VC 150-6 XE</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>VC 150-10 XE</td>
<td></td>
</tr>
</tbody>
</table>

*See Hilti’s published Objective Data — if not applicable to a specific application, exposure assessment is required.
SYSTEM OVERVIEW

Hilti concrete grinding tools are table 1 compliant through use of a dust collection shroud hooked up to a vacuum that meets table 1 requirements. Hilti currently offers the below systems with this configuration:

<table>
<thead>
<tr>
<th>Tool</th>
<th>Accessory</th>
<th>Vacuum (use any)</th>
</tr>
</thead>
<tbody>
<tr>
<td>AG 450-7S</td>
<td>4-1/2” grinding hood</td>
<td>VC 125-6, VC 125-9</td>
</tr>
<tr>
<td>AG 450-7D</td>
<td></td>
<td>VC 20-U, VC 150-6 X</td>
</tr>
<tr>
<td>DEG 500</td>
<td></td>
<td>VC 150-6 XE, VC 40-U</td>
</tr>
<tr>
<td>DCG 500-S</td>
<td></td>
<td>VC 150-10 X, VC 40-UE</td>
</tr>
<tr>
<td>DAG 500-D</td>
<td></td>
<td>VC 150-10 XE, VC 300-17 X</td>
</tr>
<tr>
<td>AG 500-11S</td>
<td></td>
<td></td>
</tr>
<tr>
<td>AG 500-11D</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: previous generations of tools may have different item numbers or nomenclature. Check with your local Hilti representative or product instruction manual to verify.
<table>
<thead>
<tr>
<th>Tool</th>
<th>Accessory</th>
<th>Vacuum (use any)</th>
</tr>
</thead>
<tbody>
<tr>
<td>AG 600-A 36</td>
<td>5&quot; grinding hood</td>
<td>VC 125-6</td>
</tr>
<tr>
<td></td>
<td></td>
<td>VC 150-6 XE</td>
</tr>
<tr>
<td></td>
<td></td>
<td>VC 150-6 X</td>
</tr>
<tr>
<td></td>
<td></td>
<td>VC 150-10 X</td>
</tr>
<tr>
<td></td>
<td></td>
<td>VC 150-10 XE</td>
</tr>
<tr>
<td></td>
<td></td>
<td>VC 300-17 X</td>
</tr>
<tr>
<td>DG 150</td>
<td>Vacuum adapter</td>
<td>VC 125-6</td>
</tr>
<tr>
<td></td>
<td></td>
<td>VC 125-6</td>
</tr>
<tr>
<td></td>
<td></td>
<td>VC 150-6 XE ***</td>
</tr>
<tr>
<td></td>
<td></td>
<td>VC 150-6 X ***</td>
</tr>
<tr>
<td></td>
<td></td>
<td>VC 40-U **</td>
</tr>
<tr>
<td></td>
<td></td>
<td>VC 40-U **</td>
</tr>
<tr>
<td></td>
<td></td>
<td>VC 150-10 X ***</td>
</tr>
<tr>
<td></td>
<td></td>
<td>VC 150-10 XE ***</td>
</tr>
<tr>
<td></td>
<td></td>
<td>VC 300-17 X</td>
</tr>
</tbody>
</table>

*Exposure assessment required
**See Hilti’s published Objective Data — if not applicable to a specific application, exposure assessment is required.
***Table 1 compliant, with the option to use objective data test report
OSHA 29 CFR §1926.1153
Respirable Silica Dust Exposure

Objective Test Data – Grinding
Hilti DG 150 with VC20-U/40-U/40-UE vacuum

Hilti has performed testing of the above system to determine the operator's respirable silica dust exposure in accordance with EN 50632-1 and EN 50632-2-3. Testing was performed under the following conditions:

- Room size: 7.8 m x 7.8 m x 3.3 m (200 m³). Closed – no air exchange.
- Grinding disc: DG-CW 150/6° CR-SP
- Test duration: 1 hour.
- Weight of collected dust: 1590 g.
- Grinding orientation: 15° from vertical.
- Grinding height: 2'-6' above floor-level.
- Force applied: average 70-90% of tool rated amperage.
- Base material: concrete slab.
- Sampler: 10 l/min GSP pump, FSP sampler. ISO 7708-compliant. 5 µm filter.
- Air sample volume collected during test: 600 liters.

Results:

| Time-Weighted Average Respirable Silica Dust Exposure¹,² | 43 µg/m³ |

¹ The silica content of base materials varies. As a result, the silica content in respirable dust samples also varies. The above-published exposure value is based on a 20% silica content applied to the total respirable dust measurement. Measured average silica content during testing was 10.0%.
² Exposure value represents the time-weighted average (TWA) over the 1-hour test period. Due to the test being conducted in a closed, non-ventilated room, this TWA exposure value would increase if the test duration was extended under the same conditions.
29 CFR §1926.1153(d)(2)(ii)
Performance Option

How to utilize Hilti “Objective Data”

Hilti has conducted testing to establish the respirable silica dust exposure ("exposure level"), associated with the use of various Hilti tool systems. These tests were performed in accordance with EN 50632, except the specific work configuration may vary to provide more versatile data and better address U.S. practices. The purpose of the testing was to generate "Objective Data" to be used as part of the exposure assessment requirements of 29 CFR §1926.1153(d)(2)(ii).

Per the EN standard, testing was performed for 1 hour in a 200m³ closed, non-ventilated room. Under these conditions, exposure levels increase over time. The exposure values published in Hilti’s Objective Data represent the average over the 1-hour test period (1-hour TWA)¹. Meaning the TWA started at zero, rose to the published 1-hour value, and would continue to rise if the test were continued.

Several underlying concepts important to applying the Objective Data to any case-specific assessment:

1. More/less work performed in a given time period will increase/decrease the exposure level.
2. Larger/smaller room size will decrease/increase the exposure level.
3. Air exchange decreases exposure levels. Specifically, a 100% air-exchange every hour (either by the work moving to a discrete area, or via sufficient air movement), means Hilti’s published 1-hour TWA exposure level is expected to conservatively represent a steady-state TWA. The conceptual basis is two-fold: air exchange would inherently reduce the published “closed room” exposure value. And sufficient air exchange to "reset" the environment every hour would keep the exposure values at that level. For reference, a typical 20", 2500 CFM box fan would introduce 100% new air volume in Hilti’s test chamber (7,200 ft³), every 3 minutes².
4. The OSHA 50 μg/m³ Permissible Exposure Level (PEL), is based on an 8-hour TWA. This means the exposure level as an 8-hour TWA is ≤50 μg/m³; a 4-hour TWA is ≤100 μg/m³ (assuming no exposure for the remainder of the shift); a 2-hour TWA is ≤200 μg/m³ (assuming no exposure for the remainder of the shift) etc. (time [hours] x exposure level [μg/m³]) ≤ 400).

Hilti’s published Objective Data states the amount of work performed during the 1-hour test ("1-hour work"). Therefore, the respirable silica dust exposure level in any case-specific situation is expected to be below the 8-hour TWA PEL in the following conditions³:

- An employee performing ≤ “1-hour work” during a shift.
- An employee performing ≤ “1-hour work” in an hour, then moving to another discrete area and performing ≤ “1-hour work” in an hour, etc., throughout an entire shift.
- An employee performing ≤ “1-hour work” each hour, in an environment with sufficient air-exchange to prevent accumulation of airborne dust.

¹ Hilti’s published Objective Data incorporates a silica content of 20% of the total respirable dust measurement. Site-specific silica content varies. OSHA Docket No. OSHA-2010-0034, reviewed 588 respirable dust samples from construction tasks, finding the silica content varied from <1%-50%, with an average of 9.1%.
² Note introduction/exhaust of 100% air volume does not necessarily correlate to a 100% air exchange.
³ As long as: (1) Hilti’s published Objective Data exposure level is ≤50 μg/m³; (2) work is performed in a room with volume ≥ 200m³, and/or having adequate ventilation; and (3) site-specific respirable silica content is ≤20% of total respirable dust.
GRINDING

Grinding Dust Control — OSHA

Hilti developed dust collection systems for its angle grinders with a shroud, to be attached to a Hilti vacuum with a filter cleaning mechanism and 99% filter efficiency, compliant with OSHA 1926.1153, Table 1.

Set-up

1. Attach the appropriate dust collection shroud to the grinder.
2. Select appropriately-sized vacuum (per OSHA Table 1, the vacuum must have a rating of at least 25 cfm per inch of wheel diameter). Attach vacuum hose to grinder shroud.
3. Start vacuum.
4. Verify proper operation of the dust collection system, including suction at the shroud
   • Check for damage or leaks in the vacuum, hose, and shroud.
   • See instructions for vacuum.
5. Verify the shroud seal is intact, and extends to at least the face of the cup wheel.

Grinding

1. Start the vacuum before beginning to grind.
2. Hold the cup wheel face parallel with (flat to) the work surface. Always maintain the grinder such that the shroud seal is in full contact with the work surface (i.e., do not tilt the grinder)
3. Avoid grinding over a free edge of the work surface as much as possible.
   • Shrouds can be opened slightly to allow close access to a perpendicular obstruction. Only operate in this opened condition when necessary.
4. Release the tool trigger and allow the grinder to come to a complete stop before lifting it from the work surface. Keep vacuum running until grinding operation is completed.

Cleaning and maintenance

• See instructions for vacuum.
For instructions on how to assemble these systems, please refer to the Hilti North America Youtube page

- VC 125
- VC 150
- VC 300

CONTENTS

Statements of compliance. .......................................................... 2–3
HEPA certification for VC 75, 125, 150 and 300 series vacuums .................................................. 4–11
HEPA certification for VC 20, 40 series vacuums .......................................................... 12–14
99% Filter certification. .......................................................... 15–19
Supplemental instructions. .......................................................... 20–24
July 1, 2018

Statement on features of Hilti VC 20, 40, 150, and 300 series vacuums:

Regarding OSHA 29 CFR Part 1926.1153, please note that the Hilti VC 20-U, VC 40-U, VC 40-UE, VC 150-6 X, VC 150-6 XE, VC 150-10 X, VC 150-10-XE, and VC 300-17 X vacuums all meet the following requirements given in Table 1:

- 99% or greater filter efficiency
- self-cleaning filter mechanism
- provide the below cubic feet per minute (cfm) of suction
  - VC 20-U and 40-U: 129 cfm
  - VC 150 series: 150 cfm
  - VC 300 series: 300 cfm
- HEPA filter is available

When used in conjunction with the corresponding Hilti tools and dust removal systems meeting the listed Table 1 requirements, you will have a compliant system as specified in the regulation.

Please contact your local Hilti representative with any additional questions. For additional clarification please refer to 29 CFR Part 1926.1153.

Sincerely,

Hilti product team
Statement on features of Hilti VC 125 series vacuums:

Regarding OSHA 29 CFR Part 1926.1153, please note that the Hilti VC 75-1-A22, VC 125-6 and VC 125-9 vacuums all meet the following requirements given in Table 1:

- 99% or greater filter efficiency
- Manual filter cleaning mechanism
- Provide the below cubic feet per minute (cfm) of suction
  - VC 75-1-A22: 75 cfm (max) 40 cfm (eco)
  - VC 125 series: 125 cfm
- HEPA filter is available

When used in conjunction with the corresponding Hilti tools and dust removal systems meeting the listed Table 1 requirements, you will have a compliant system as specified in the regulation.

Please contact your local Hilti representative with any additional questions. For additional clarification please refer to 29 CFR Part 1926.1153.

Sincerely,

Hilti product team
Certificate of Compliance

HILTI VC 75-1 A22 HEPA Filter Unit
Filter # 2192228
Hilti, Inc.
7250 North Dallas Parkway
Plano, TX 75024

On this Date: April 9, 2018

Testing conducted in accordance with IES RP-CC-002 & Following guidelines within Reference Standard; IES-RP-CC-0034.4

Conducted by: ENV Services, Inc.
4758 Research Dr.
San Antonio, TX 78240

Administered By: Jerry Maxwell
Certificate of Compliance

HILTI VC 125-6 HEPA Vacuum Unit
Filter # 203879
Hilti, Inc.
7250 North Dallas Parkway
Plano, TX 75024

On this Date: April 9, 2018

Testing conducted in accordance with IES RP-CC-002 & Following guidelines within Reference Standard; IES-RP-CC-0034.4

Conducted by: ENV Services, Inc.
4758 Research Dr.
San Antonio, TX 78240

Administered By: Jerry Maxwell
Certificate of Compliance

HILTI VC 125-9 HEPA Vacuum Unit
Filter # 203879
Hilti, Inc.
7250 North Dallas Parkway
Plano, TX 75024

On this Date: April 9, 2018

Testing conducted in accordance with IES RP-CC-002 & Following guidelines within Reference Standard; IES-RP-CC-0034.4

Conducted by: ENV Services, Inc.
4758 Research Dr.
San Antonio, TX 78240

Administered By: Jerry Maxwell
Certificate of Compliance

HILTI VC 150-6X HEPA Vacuum Unit
Filter # 203879
Hilti, Inc.
7250 North Dallas Parkway
Plano, TX  75024

On this Date:  April 9, 2018

Testing conducted in accordance with IES RP-CC-002 & Following guidelines within
Reference Standard; IES-RP-CC-0034.4

Conducted by:  ENV Services, Inc.
4758 Research Dr.
San Antonio, TX  78240

Administered By : Jerry Maxwell
Certificate of Compliance

HILTI VC 150-6XE HEPA Vacuum Unit
Filter # 203879
Hilti, Inc.
7250 North Dallas Parkway
Plano, TX 75024

On this Date: April 9, 2018

Testing conducted in accordance with IES RP-CC-002 & Following guidelines within Reference Standard; IES-RP-CC-0034.4

Conducted by: ENV Services, Inc.
4758 Research Dr.
San Antonio, TX 78240

Administered By: Jerry Maxwell
Certificate of Compliance

HILTI VC 150-10X HEPA Vacuum Unit
Filter # 203879
Hilti, Inc.
7250 North Dallas Parkway
Plano, TX  75024

On this Date:  April 9, 2018

Testing conducted in accordance with IES RP-CC-002 & Following guidelines within Reference Standard; IES-RP-CC-0034.4

Conducted by:  ENV Services, Inc.
4758 Research Dr.
San Antonio, TX  78240

Administered By :  Jerry Maxwell
Certificate of Compliance

HILTI VC 150-10XE HEPA Vacuum Unit

Filter # 203879
Hilti, Inc.
7250 North Dallas Parkway
Plano, TX  75024

On this Date:  April 9, 2018

Testing conducted in accordance with IES RP-CC-002 & Following guidelines within Reference Standard; IES-RP-CC-0034.4

Conducted by:  ENV Services, Inc.
4758 Research Dr.
San Antonio, TX  78240

Administered By:  Jerry Maxwell
Certificate of Compliance

HILTI VC 300-17X HEPA Vacuum Unit
Filter # 2177708
Hilti, Inc.
7250 North Dallas Parkway
Plano, TX  75024

On this Date:  April 9, 2018

Testing conducted in accordance with IES RP-CC-002 & Following guidelines within Reference Standard; IES-RP-CC-0034.4

Conducted by:  ENV Services, Inc.
4758 Research Dr.
San Antonio, TX  78240

Administered By :  Jerry Maxwell
Certificate of Compliance

HILTI VC20U HEPA Vacuum Unit

Hilti, Inc.
7250 North Dallas Parkway
Plano, TX 75024

On this Date: 7/13/2015

Testing conducted in accordance with IES RP-CC-002 & Following guidelines within Reference Standard; IES-RP-CC-0034.1

Conducted by: ENV Services, Inc.
4758 Research Dr.
San Antonio, TX 78240

Administered By: Ken Waterhouse
Certificate of Compliance

HILTI VC40U HEPA Vacuum Unit

Hilti, Inc.
7250 North Dallas Parkway
Plano, TX 75024

On this Date: 7/13/2015

Testing conducted in accordance with IES RP-CC-002 & Following guidelines within Reference Standard; IES-RP-CC-0034.1

Conducted by: ENV Services, Inc.
4758 Research Dr.
San Antonio, TX 78240

Administered By: Ken Waterhouse
Certificate of Compliance

HILTI VC40U/Outlet HEPA Vacuum Unit

Hilti, Inc.
7250 North Dallas Parkway
Plano, TX 75024

On this Date: 7/13/12015

Testing conducted in accordance with IES RP-CC-002 & Following guidelines within Reference Standard; IES-RP-CC-0034.1

Conducted by: ENV Services, Inc.
4758 Research Dr.
San Antonio, TX 78240

Administered By: Ken Waterhouse
Certificate of Compliance

HILTI VC 75-1 A22 Vacuum Unit

Hilti, Inc.
7250 North Dallas Parkway
Plano, TX  75024

On this Date:  April 9, 2018

Testing conducted in accordance with IEST RP-CC002.4 for no leakage greater than 1%

Conducted by:  ENV Services, Inc.
4758 Research Dr.
San Antonio, TX  78240

Administered By :  Jerry Maxwell
To whom it may concern

Herewith we confirm that the filter material meets the requirements of degree of penetration valid for dust-class “M” according to IFA (Institute for Occupational Safety & Health) test certificate.

Test Certificate No. No. 201722886/6210
Hilti item number 428625
Type, designation Filter material 1 ply / YiTai H11
Marking YiTai H11
Test method, requirements IEC 60335-2-69:2012 / EN 60335-2-69:2015,
AA 22.201.1,
IFA Principles for testing filters for use in dust-
removing machines and devises, edition 01/2010
Assessment, suitability Filter material designated meets the requirements of
(special marks) dust class “M” in accordance with the standard DIN
EN 60335-2-69:2010 if filter area load is within range
of 200m³/m² h (corresponding to a blower stream of
0.056 m/s).
This filter material is applicable for use in dust-
removing machines and devices of the dust class “M”.

Air Velocity of blower stream 0,056 m/s
Requirement valid for dust-class “M”
Maximum permissible degree of
penetration < 0,10 %
Filtration efficiency ≥ 99,9 %
Test result
Mean value of degree of penetration < 0,01 % (determined by six measurements)

Kaufering, November 28, 2017

[Signature]
Lars Melzer
Head of Competence Center Health & Safety Technologies

Hilti Entwicklungsgesellschaft mbH
Hiltsstrasse 6
86916 Kaufering

T +49 8191 90-0 I F +49 8191 90-6790
www.hilti.com

Deutsche Bank München I IBAN: DE35 7007 0010 0171 4849 00 I BIC: DEUTDESMI
USI IBAN: DE 811172981
To whom it may concern

Herewith we confirm that the filter material meets the requirements of degree of penetration valid for dust-class "M" according to IFA (Institute for Occupational Safety & Health) test certificate.

Test Certificate No. No. 201323880/6210
Hilti item number 2121386, 2177885
Type, designation Filter material 1 ply / BN 2.187f
Marking BN 2.187f
Test method, requirements IEC 60335-2-69:2012 / EN 60335-2-69:2015,
AA 22.201.1,
IFA Principles for testing filters for use in dust-
removing machines and devises, edition 01/2010
Assessment, suitability Filter material designated meets the requirements of
durist class "M" in accordance with the standard DIN
EN 60335-2-69:2010 if filter area load is within range
of 250m³/m² h to 400m³/m² h (corresponding to a
blower stream of 0.069 m/s to 0.111 m/s).
This filter material is applicable for use in dust-
removing machines and devices of the dust class "M".
Air Velocity of blower stream 0,111 m/s
Requirement valid for dust-class "M"
Maximum permissible degree of
penetration < 0,10 %
Filtration efficiency ≥ 99,9 %
Test result
Mean value of degree of penetration 0,01 % (determined by six measurements)

Kaufering, November 28, 2017

Lars Melzer
Head of Competence Center Health & Safety Technologies
To whom it may concern

Herewith we confirm that the filter material meets the requirements of degree of penetration valid for dust-class “M” according to IFA (Institute for Occupational Safety & Health) test certificate.

Test Certificate No. No. 201323723/6210
Hilti item number 2121387
Type, designation Filter material 1 ply / BN 2.198c
Marking BN 2.198c
Test method, requirements IEC 60335-2-69:2012 / EN 60335-2-69:2015, AA 22.201.1,
IFA Principles for testing filters for use in dust-removing machines and devises, edition 01/2010

Assessment, suitability (special marks)
Filter material designated meets the requirements of dust class “M” in accordance with the standard DIN EN 60335-2-69:2010 if filter area load is within range of 250m³/m² h to 400m³/m² h (corresponding to a blower stream of 0.069 m/s to 0.111 m/s).
This filter material is applicable for use in dust-removing machines and devices of the dust class “M”.

Air Velocity of blower stream 0,111 m/s
Requirement valid for dust-class “M”
Maximum permissible degree of penetration < 0,10 %
Filtration efficiency ≥ 99,9 %
Test result
Mean value of degree of penetration 0,01 % (determined by six measurements)

Kaufering, November 28, 2017

Lars Melzer
Head of Competence Center Health & Safety Technologies
To whom it may concern

Herewith we confirm that the filter material meets the requirements of degree of penetration valid for dust-class “M” according to IFA (Institute for Occupational Safety & Health) test certificate.

Test Certificate No. No. 201323606/6210
Hilti item number 436058
Type, designation Filter material 1 ply / BN 2.174c
Marking BN 2.174c
Test method, requirements IEC 60335-2-69:2012 / EN 60335-2-69:2015, AA 22.201.1,
IFA Principles for testing filters for use in dust-removing machines and devises, edition 01/2010
Assessment, suitability Filter material designated meets the requirements of durst class “M” in accordance with the standard DIN EN 60335-2-69:2010 if filter area load is within range of 250m³/m² h to 400m³/m² h (corresponding to a blower stream of 0.069 m/s to 0.111 m/s).
(special marks) This filter material is applicable for use in dust-removing machines and devices of the dust class “M”.

Air Velocity of blower stream 0,111 m/s
Requirement valid for dust-class “M”
Maximum permissible degree of penetration < 0,10 %
Filtration efficiency ≥ 99,9 %
Test result
Mean value of degree of penetration < 0,01 % (determined by three measurements)

Kaufering, November 28, 2017

Lars Melzer
Head of Competence Center Health & Safety Technologies
VACUUM CLEANER

VC 75/125/150/300 OSHA

Hilti developed a vacuum cleaner system with a filter cleaning mechanism and a >99% filter efficiency, compliant with many of the OSHA 1926.1153, Table 1 specified controls.

Set-up

1. Put a filter into the filter compartment. Decide which filter depending on your applications. See filter section for further information.
2. Put filter bag into the tank. Decide which filter bag depending on your applications. See filter bag section for further information.
3. Put hose into head and attach it to the adaptor of the tool. See tool manual for further information on correct adaptor.
4. Plug vacuum cleaner in socket.
5. Start vacuum cleaner by turning control switch on. Verify proper operation of vacuum cleaner.
   - head on correct and sealed
   - no kinks/breaks/plugs in hose
   - check for normal suction at hose end
   - nothing blocking exhaust port
   - For VC 20/40/150/300, verify the automatic filter cleaning mechanism is turned on, and operating (audible thumping every ~15 seconds).
6. Start running the tool only when vacuum cleaner is on.
7. Turn vacuum cleaner off after tool is turned off.

Cleaning and maintenance

1. For VC 125 and VC 75-1-A22, push manual filter cleaning button every 3 to 5 minutes depending on application, and whenever there is a noticeable change in suction or dust collection.
2. Filter and filter bag needs to be cleaned and exchanged regularly. See filter and filter bag section for further information.
## UNIVERSAL FILTER-BAGS / PLASTIC BAGS

### Applications
- For dry and wet applications
- Will not increase lifetime of filter, no pre-filtering
- For dry applications
- Virtually dustless recycling / emptying
- Pre-filter, will increase lifetime of filter

### How to put bag in vacuum
1. Remove head from tank
2. Put bag into the tank
3. Check that holes are within the vacuum cleaner when installed and that the plastic bag doesn’t overlap clamp area
4. Put head back on tank and close clamps properly
1. Remove head from tank
2. Put bag into the tank
3. Connect flange of filter bag to the adapter
4. Put head back on tank and close clamps

### Disposal guidelines
- Recycle bag when it is full
- Tie off or seal paper/fleece bags. Twist plastic bags. Roll bucket to nearest sealed receptacle and transfer bag to garbage.
- To be recycled normally (dispose of bag according to local regulations)
- Close cap when bag is full or needs to be recycled
- Dispose of bag according to local regulations.
### Do’s and Don’ts with Universal Filter-Bags / Plastic Bags

<table>
<thead>
<tr>
<th><strong>Do’s</strong></th>
<th><strong>Don’ts</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>- Dispose of bag when it is full</td>
<td>- Fill plastic bag to completely full, it can rip apart</td>
</tr>
</tbody>
</table>
| - Use filter bags for all dry applications  
  - Increases lifetime of your vacuum  
  - Increase lifetime of your filter | - Overlap the clamp area with the plastic bag |
| - Mandatory for all wood applications | - Shake full filter-bag  
  - Dust can exit  
  - Bag can rip apart |
| - Connect flange of filter bag properly into adapter | - Use bag for wet applications |
## DO’S AND DON’TS WITH FILTERS

### Do’s
- Clean filter with automatic filter cleaning
- Power cleaning: Remove hose, close inlet for 3-5 automatic filter cleaning cycles
- Use performance filters (PTFE) in order to have a longer lifetime of your vacuum, longer lifetime of the filter and less blockage of the filter
- Filter sealing needs to be properly installed
- During filter change, clean up filter frame and sealing area
- Check filter condition before starting an application

### Don’ts
- Mix dry and wet applications. Filter used for wet applications needs to be exchanged or dried before using it for dry applications
- Manually cleaning the filter, it will be damaged -> a damaged or missing filter can lead to a broken turbine since dust can enter (reduces lifetime of vacuum cleaner)
  - Banging against the wall
  - Cleaning with high-pressured air
  - Use water jet / air pressure jet to clean the filter
  - Use sharp things e.g. wrench etc. to clean the filter
- Use vacuum cleaner without a filter
FILTER CLEANING AND EXCHANGE

Filter needs to be cleaned when:

- Feeling of less suction power
  - Clean filter with automatic filter cleaning
- Dust is coming out of the vacuum cleaner. Indication that filter is blocked
- Visual check shows that filter needs to be cleaned

Filter needs to be exchanged when:

- Dust is coming out of the vacuum cleaner. Indication that filter is broken or blocked
- Even after cleaning the filter, suction power is insufficient
- Visual check shows that filter needs to be exchanged due to a high volume of dust near or inside the filter