



# 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.

Equipment / Task	Engineering and work practice control methods	Required respiratory protections and minimum Assigned Protection Factor (APF)	
		≤ 4 hours / shift	> 4 hours / shift
Handheld and stand-mounted drills (including impact and rotary hammer drills)	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.	None	None
		None	None

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.

DRS module name	Tool name and generation	DRS system item number	Method of compliance
DRS 4-A	TE 4-A gen 1	n/a	Exposure assessment
	TE 4-A gen 2	2098490 <sup>2</sup>	Objective data <sup>3</sup>
		2177080	Table 1 <sup>1</sup> /Objective data <sup>3</sup>
DRS 6-A	TE 6-A gen 1	n/a	Exposure assessment
	TE 6-A gen 2	n/a	Exposure assessment
	TE 6-A gen 3	2040914	Objective data
	TE 6-A gen 4 or TE 6-A22	2172902	Table 1 <sup>1</sup> /Objective data <sup>3</sup>
		2098511 <sup>2</sup>	Objective data <sup>3</sup>
DRS-M	TE 6 / 6-S / 7 / 7-C / TE 7-A	267769	Objective data <sup>3</sup>

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:

Tool	Accessory
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Rotary hammer TE 4-A 18 or TE 4-A 22



Dust removal system TE DRS 4-A



Rotary hammer TE 6-A 36



Dust removal system TE DRS 6-A



or Rotary hammer TE 6-A22



Rotary hammer TE 7 or TE 7-C



Dust removal system TE DRS-M

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

# OSHA 29 CFR §1926.1153 RESPIRABLE SILICA DUST EXPOSURE

## 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<sup>1</sup>. Testing was performed under the following conditions:

- Room size: 7.8m x 7.8m x 3.3m Closed — no air exchange
- Drilled hole dimensions:  $\varnothing 5/8'' \times 2''$
- 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  $\mu\text{m}$  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:

<b>Time-Weighted Average Respirable Silica Dust Exposure<sup>2,3</sup></b>	<b>45 <math>\mu\text{g}/\text{m}^3</math></b>
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1 Exception: EN 50632-2-6 specifies drilling one hundred twenty  $\varnothing 16\text{mm} \times 50\text{mm}$  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 200m<sup>3</sup> 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)<sup>1</sup>. 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 ft<sup>3</sup>), every 3 minutes<sup>2</sup>.
4. The OSHA 50 µg/m<sup>3</sup> Permissible Exposure Limit (PEL), is based on an 8-hour TWA. This means the exposure level as an 8-hour TWA is ≤50 µg/m<sup>3</sup>; a 4-hour TWA is ≤100 µg/m<sup>3</sup> (assuming no exposure for the remainder of the shift); a 2-hour TWA is ≤200 µg/m<sup>3</sup> (assuming no exposure for the remainder of the shift) etc. (time [hours] x exposure level [µg/m<sup>3</sup>] ≤ 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<sup>3</sup>:

- 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 airexchange to prevent accumulation of airborne dust.

<sup>1</sup> 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%.

<sup>2</sup> Note introduction/exhaust of 100% air volume does not necessarily correlate to a 100% air exchange.

<sup>3</sup> As long as: (1) Hilti’s published Objective Data exposure level is ≤50 µg/m<sup>3</sup>; (2) work is performed in a room with volume ≥ 200m<sup>3</sup>, 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 in<sup>3</sup> of hole drilling (e.g. after 8-10 holes 5/8 in x 2 in (16 mm x 50 mm)).
- After every 3 in<sup>3</sup> of hole drilling (e.g. after 5 holes  $\varnothing$  1/2 in depth 3 in ( $\varnothing$ 12 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.



# HILTI SUBMITTAL PACKAGE OSHA 1926.1153 TABLE 1, SECTION vii

**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.

Equipment / Task	Engineering and work practice control methods	Required respiratory protections and minimum Assigned Protection Factor (APF)	
		≤ 4 hours / shift	> 4 hours / shift
Handheld and stand-mounted drills (including impact and rotary hammer drills)	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.	None	None
		None	None

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.

DRS module name	Tool name and generation	Vacuums (can use any)	Method of compliance
TE 2 series TE 3-C series TE 7 series TE 4-A 22 TE 6-A 36 TE 30 series TE 30-A 36 TE 40-AVR	<b>DRS-D</b> (Item number 2191207)	VC 75-1-A22 <sup>1</sup> VC 125-6 VC 125-9 VC 20-U VC 40-U VC 40-UE VC 150-6 XE VC 150-10 XE VC 300-17 X	All Table 1 compliant
TE 50-AVR TE 60 series TE 70 series TE 80-ATC/AVR			

<sup>1</sup> 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:

Tool	Accessory	Vacuum (use any)
 TE 2 and TE 2-S		 VC 75-1-A22 <sup>1</sup>
 TE 3-C		 VC 125-6      VC 125-9
 TE 7 and TE 7-C	 TE 4-A 22	 VC 20-U      VC 40-U
 TE 6-A 36	 DRS-D	 VC 150-6 XE      VC 40-UE
 TE 30 and TE 30-C	 TE 30-A 36	 VC 150-10 XE      VC 300-17 X
 TE 40-AVR		

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

<sup>1</sup> 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).

Tool	Accessory	Vacuum (use any)	
			
TE 50-AVR			
			
TE 60-AVR		VC 125-6	VC 125-9
			
TE 60-ATC/AVR		VC 20-U	VC 40-U
			
TE 70-AVR	DRS-D	VC 150-6 XE	VC 40-UE
			
TE 70-ATC/AVR		VC 150-10 XE	VC 300-17 X
			
TE 80-ATC/AVR			

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.



# HILTI SUBMITTAL PACKAGE OSHA 1926.1153 TABLE 1, SECTION vii

**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

 DRS-S

## 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.

Equipment / Task	Engineering and work practice control methods	Required respiratory protections and minimum Assigned Protection Factor (APF)	
		≤ 4 hours / shift	> 4 hours / shift
Handheld and stand-mounted drills (including impact and rotary hammer drills)	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.	None	None
		None	None

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.

DRS module name	Tool name and generation	Vacuums (can use any)	Method of compliance
TE 2 series TE 3-C series TE 7 series TE 4-A 22 TE 6-A 36 TE 30 series TE 30-A 36 TE 40-AVR	<b>DRS-S</b> (Item number 340602)	VC 125-6 VC 125-9 VC 20-U VC 40-U VC 40-UE VC 150-6 X VC 150-10 X VC 150-6 XE VC 150-10 XE	All table 1 compliant
TE 50-AVR TE 60 series TE 70 series TE 80-ATC/AVR	Depth gauge* and DRS-S required	VC 300-17 X	

\*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:

Tool	Accessory	Vacuum (use any)		
 TE 2 and TE 2-S		 VC 125-6	 VC 125-9	
 TE 3-C		 VC 20-U	 VC 150-6 X	
 TE 7 and TE 7-C	 DRS-S	 VC 150-6 XE	 VC 40-U	
 TE 4-A 22		 TE 6-A 36	 VC 150-10 X	 VC 40-UE
 TE 7-A		 TE 30 and TE 30-C	 VC 150-10 XE	 VC 300-17 X
 TE 30-A 36		 TE 40-AVR		

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

Tool	Accessory	Vacuum (use any)	
 TE 50-AVR		 VC 125-6	 VC 125-9
 TE 60-AVR		 VC 20-U	 VC 150-6 X
 TE 60-ATC/AVR	 Depth gauge (sold separately)	 VC 150-6 XE	 VC 40-U
 TE 70-AVR	 DRS-S	 VC 150-10 X	 VC 40-UE
 TE 70-ATC/AVR		 VC 150-10 XE	 VC 300-17 X
 TE 80-ATC/AVR			

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.



# HILTI SUBMITTAL PACKAGE OSHA 1926.1153 TABLE 1, SECTION x AND SECTION vii

**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

 DRS-Y

## 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

OR



**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.

Equipment / Task	Engineering and work practice control methods	Required respiratory protections and minimum Assigned Protection Factor (APF)	
		≤ 4 hours / shift	> 4 hours / shift
Handheld and stand-mounted drills (including impact and rotary hammer drills)	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.		
	<ul style="list-style-type: none"> <li>• When used outdoors</li> </ul>	None	None
	<ul style="list-style-type: none"> <li>• When used indoors or in an enclosed area</li> </ul>	None	None
Jackhammers and handheld powered chipping tools	Use tool with water delivery system that supplies a continuous stream or spray of water at the point of impact.		
	<ul style="list-style-type: none"> <li>• When used outdoors</li> </ul>	None	APF 10
	<ul style="list-style-type: none"> <li>• When used indoors or in an enclosed area</li> </ul>	APF 10	APF 10
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.		
	<ul style="list-style-type: none"> <li>• When used outdoors</li> </ul>	None	APF 10
	<ul style="list-style-type: none"> <li>• When used indoors or in an enclosed area</li> </ul>	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.

Tool models*	Accessory	Vacuums (can use any)	Method of compliance
TE 50 TE 50-AVR TE 60 TE 60-AVR TE 60-ATC/AVR TE 70-AVR TE 70-ATC/AVR TE 80-ATC/AVR	DRS-Y (Item number 2055718)	VC 125-6 VC 125-9 VC 20-U VC 40-U VC 40-UE VC 150-6 X VC 150-10 X VC 150-6 XE VC 150-10 XE VC 300-17 X	All table 1 compliant

## 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:

Tool	Accessory	Vacuum (use any)
 TE 50-AVR		 VC 125-6  VC 125-9
 TE 60-AVR		 VC 20-U  VC 150-6 X
 TE 60-ATC/AVR	 TE DRS-Y	 VC 150-6 XE  VC 40-U
 TE 70-AVR		 VC 150-10 X  VC 40-UE
 TE 70-ATC/AVR		 VC 150-10 XE  VC 300-17 X
 TE 80-ATC/AVR		

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). 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.



# HILTI SUBMITTAL PACKAGE OSHA 1926.1153 TABLE 1, SECTION vii

**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.

Equipment / Task	Engineering and work practice control methods	Required respiratory protections and minimum Assigned Protection Factor (APF)	
		≤ 4 hours / shift	> 4 hours / shift
Handheld and stand-mounted drills (including impact and rotary hammer drills)	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.	None	None
		None	None

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

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

Tool	Accessory	Vacuum (use any)	
 TE 2-A 18		 VC 125-6	 VC 125-9
 TE 2 and TE 2-S		 VC 20-U	 VC 150-6 X
 TE 3-C		 VC 150-6 XE	 VC 40-U
 TE 7 and TE 7-C	 TE-CD hollow drill bits	 VC 150-10 X	 VC 40-UE
 TE 4-A 22		 VC 150-10 X	 VC 40-UE
 TE 6-A 36		 VC 150-10 XE	 VC 300-17 X
 TE 7-A			
 TE 30 and TE 30-C			
 TE 30-A 36			
 TE 40-AVR			

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

Tool	Accessory	Vacuum (use any)	
 TE 50-AVR		 VC 125-6	 VC 125-9
 TE 60-AVR		 VC 20-U	 VC 150-6 X
 TE 60-ATC/AVR	 TE-YD hollow drill bits	 VC 150-6 XE	 VC 40-U
 TE 70-AVR		 VC 150-10 X	 VC 40-UE
 TE 70-ATC/AVR		 VC 150-10 XE	 VC 300-17 X
 TE 80-ATC/AVR			

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 X

## 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 cowl 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.

Equipment / Task	Engineering and work practice control methods	Required respiratory protections and minimum Assigned Protection Factor (APF)	
		≤ 4 hours / shift	> 4 hours / shift
(x) Jackhammers and handheld powered chipping tools	Use tool with water delivery system that supplies a continuous stream or spray of water at the point of impact. <ul style="list-style-type: none"> <li>• When used outdoors</li> <li>• When used indoors or in an enclosed area</li> </ul>	None	APF 10
		APF 10	APF 10
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. <ul style="list-style-type: none"> <li>• When used outdoors</li> <li>• When used indoors or in an enclosed area</li> </ul>	None	APF 10
		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-B with older tool generations, check the sticker on the inside of the case on the DRS-B, or refer to the instruction manual.

Tool models	Accessory	Vacuums (can use any)	Method of compliance
TE 50 / 56 / 60 / 70 / 76 / 80 TE 505 / 500-AVR TE 706 / 700-AVR TE 805 / TE 800-AVR TE 905 TE 1000-AVR TE 1500-AVR TE 2000-AVR	DRS-B Item number 365944	VC 125-6 VC 125-9 VC 20-U VC 40-U VC 40-UE VC 150-6 X VC 150-10 X VC 150-6 XE VC 150-10 XE VC 300-17 X	All Table 1 compliant
Separate system  TE 3000-AVR	DRS 3000 Item number 2171779		

# 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:

Tool	Accessory	Vacuum (use any)	
 <p>TE 500-AVR</p>		 <p>VC 125-6</p>	 <p>VC 125-9</p>
 <p>TE 700-AVR</p>		 <p>VC 20-U</p>	 <p>VC 150-6 X</p>
 <p>TE 800-AVR</p>	 <p>TE DRS-B</p>	 <p>VC 150-6 XE</p>	 <p>VC 40-U</p>
 <p>TE 1000-AVR</p>		 <p>VC 150-10 X</p>	 <p>VC 40-UE</p>
 <p>TE 1500-AVR</p>		 <p>VC 150-10 XE</p>	 <p>VC 300-17 X</p>
 <p>TE 2000-AVR</p>		 <p>TE DRS 3000</p>	
 <p>TE 3000-AVR</p>		 <p>TE DRS 3000</p>	

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.

Equipment / Task	Engineering and work practice control methods	Required respiratory protections and minimum Assigned Protection Factor (APF)	
		≤ 4 hours / shift	> 4 hours / shift
(xii) Handheld grinders for uses other than mortar removal	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.	None	None
	• When used outdoors	None	None
	• When used indoors or in an enclosed area	None	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.

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

\*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:

Tool	Accessory	Vacuum (use any)	
 AG 450-7S	 4-1/2" grinding hood	 VC 125-6	 VC 125-9
 AG 450-7D		 VC 20-U	 VC 150-6 X
 DEG 500	 5" grinding hood	 VC 150-6 XE	 VC 40-U
 DCG 500-S		 VC 150-10 X	 VC 40-UE
 DAG 500-D	 5" grinding hood	 VC 150-10 XE	 VC 300-17 X
 AG 500-11S		 VC 150-10 XE	 VC 300-17 X
 AG 500-11D		 VC 150-10 XE	 VC 300-17 X

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

Tool	Accessory	Vacuum (use any)	
 <p>AG 600-A 36 grinding hoods for AG 600 are designed for 5 inch max. diameter wheels only</p>	 <p>5" grinding hood</p>	 <p>VC 125-6</p>  <p>VC 150-6 XE</p>  <p>VC 150-10 X</p>  <p>VC 300-17 X</p>	 <p>VC 125-9</p>  <p>VC 150-6 X</p>  <p>VC 150-10 XE</p>
 <p>DG 150</p>	 <p>Vacuum adapter</p>	 <p>VC 125-6*</p>  <p>VC 20-U**</p>  <p>VC 150-6 XE***</p>  <p>VC 150-10 X***</p>  <p>VC 150-10 XE***</p>	 <p>VC 125-9*</p>  <p>VC 150-6 X***</p>  <p>VC 40-U**</p>  <p>VC 40-UE**</p>  <p>VC 300-17 X</p>

\*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: 7.8m x 7.8m x 3.3m (200 m<sup>3</sup>). 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 Exposure <sup>1,2</sup>	43 µg/m <sup>3</sup>
--	----------------------



<sup>1</sup> 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%.

<sup>2</sup> 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 200m<sup>3</sup> 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)<sup>1</sup>. 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 ft<sup>3</sup>), every 3 minutes<sup>2</sup>.
4. The OSHA 50 µg/m<sup>3</sup> Permissible Exposure Level (PEL), is based on an 8-hour TWA. This means the exposure level as an 8-hour TWA is ≤50 µg/m<sup>3</sup>; a 4-hour TWA is ≤100 µg/m<sup>3</sup> (assuming no exposure for the remainder of the shift); a 2-hour TWA is ≤200 µg/m<sup>3</sup> (assuming no exposure for the remainder of the shift) etc. (time [hours] x exposure level [µg/m<sup>3</sup>] ≤ 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<sup>3</sup>:

- 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.

<sup>1</sup> 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%.

<sup>2</sup> Note introduction/exhaust of 100% air volume does not necessarily correlate to a 100% air exchange.

<sup>3</sup> As long as: (1) Hilti’s published Objective Data exposure level is ≤50 µg/m<sup>3</sup>; (2) work is performed in a room with volume ≥ 200m<sup>3</sup>, 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.



# HILTI VACUUM PORTFOLIO

Supporting information



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

 VC 125

 VC 150

 VC 300

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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 vacuumns 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



July 1, 2018

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**

Administered By : *Jerry Maxwell*

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



# 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

Administered By : *Ken Waterhouse*

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



# 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

Administered By : *Ken Waterhouse*

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



# Certificate of Compliance

**HILTI VC40U/Outlet 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**

Administered By : *Ken Waterhouse*

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



# 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%**

Administered By : *Jerry Maxwell*

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

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 devices, 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 200m <sup>3</sup> /m <sup>2</sup> 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

Lars Melzer  
Head of Competence Center Health & Safety Technologies

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Geschäftsführer Josef Obermeier  
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Amtsgericht Augsburg HRB 16 295

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 devices, edition 01/2010
Assessment, suitability (special marks)	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 250m <sup>3</sup> /m <sup>2</sup> h to 400m <sup>3</sup> /m <sup>2</sup> 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

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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 devices, 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 250m <sup>3</sup> /m <sup>2</sup> h to 400m <sup>3</sup> /m <sup>2</sup> 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



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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 devices, 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 250m <sup>3</sup> /m <sup>2</sup> h to 400m <sup>3</sup> /m <sup>2</sup> 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 three measurements)

Kaufering, November 28, 2017



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# 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

**Plastic Bag**



**Universal Bag**



## 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

Plastic Bag



Universal Bag



## Do's

- Dispose of bag when it is full

- Use filter bags for all dry applications
  - Increases lifetime of your vacuum
  - Increase lifetime of your filter
- Dispose of bag when it is full
- Mandatory for all wood applications
- Connect flange of filter bag properly into adapter

## Don'ts

- Fill plastic bag to completely full, it can rip apart
- Overlap the clamp area with the plastic bag

- Shake full filter-bag
  - Dust can exit
  - Bag can rip apart
- 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



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