

Report

Mesa

NS-EN 16510-1:2022 Residential solid fuel burning appliances – General requirements and test methods

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Mesa

VERSION	DATE	
1	2023-09-19	
AUTHOR(S) Asbjørn Østnor		
CLIENT(S) Bålstedet AS	CLIENT'S REF. Geir Egholm	
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TEST OBJECT Mesa	TEST OBJECT RECEIVED 2023-08-10	
TEST PROGRAMME NS-EN 16510-1:2022 Residential solid fuel burning appliances – General requirements and test methods	TEST LOCATION RISE Fire Research	DATE OF TEST 2023-09-14

SUMMARY:

Because there are no test standard for safety test of Fire pits, the tests are based on the test method for heating appliances EN 16510-1:2022.

The distance to a combustible wall shall be minimum 200 mm.

PREPARED BY Asbjørn Østnor	SIGNATURE	
APPROVED BY Asbjørn Østnor	SIGNATURE 	
REPORT NO. 20012-115 E	CLASSIFICATION Restricted	CLASSIFICATION THIS PAGE Restricted

History

VERSION	DATE	VERSION DESCRIPTION
1	2023-09-19	First version.



1. Product description

Product name:	Mesa
Manufacturer:	Bålstedet AS
Place of production:	USA
Variants:	-
Sampling:	The tested fireplace was selected by the client.

Mesa is a fire pit for outdoor use made of stainless steel (304). The burning chamber has holes in the top for preheated air.

Dimension of Mesa:

Height 17.3 cm

Diameter 13 cm

Weight of stove 0.6 kg

2. Test performance

The safety test performed in accordance with NS-EN 16510-1.

Operators:	Asbjørn Østnor
Conditioning of the test material:	NA
Number of single tests:	2

3. Remarks/deviations

- The requirements for temperatures on combustible materials are degrees Celsius above ambient temperature in Kelvin.
- The safety tests are based on the method in EN 16510-1, but the batch load are adjusted to the burning chamber of the fire pit.

4. Test results

4.1. Safety test

Table 1: Test fuel specifications - Safety

Test fuel specifications - Safety	
Fuel type	Fir timber
Moister content	14 %
Lower calorific value (H _u)	17.430 MJ/kg
Size, length	25 x 25, 50 mm

The safety test was performed with the fire pit placed in the test hearth with ceiling. Key figures and measured temperature rise are presented in Table 2 and 3.

Table 2: Results from safety test 1 with wood (spruce).

	UNIT	RESULT	REQUIREMENT
Duration	h	0,75	-
Wight of one batch, average	kg	0,1	-
Weight of test fuel, total	kg	0,38	-
Moisture content in test fuel	%	14	-
Combustion velocity	kg/h	0.51	-
Lower calorific value	MJ/kg	17.43	-
Ambient temperature	°C	21	-
Wall (200 mm distance)	K	28	≤ 65
Floor	K	17	≤ 65
Ceiling, 1.4 m above floor ¹⁾	K	41	≤ 65
Outside surface of fire pit ²⁾	K	250	≤ 35

¹⁾ Some sparks can reach the ceiling and can cause higher temperatures than measured. Use of ceiling will be at the owners responsibility. Each load of wood should be small, and consist of hardwood like birch.

²⁾ You need tool or protective gloves to touch the fire pit during operation.

Table 3: Results from safety test 2 with pellets.

	UNIT	RESULT	REQUIREMENT
Duration	h	1.25	-
Wight of one batch, average	kg	0.20	-
Weight of test fuel, total	kg	1.00	-
Moisture content in test fuel	%	6	-
Combustion velocity	kg/h	0.80	-
Lower calorific value	MJ/kg	17.43	-
Ambient temperature	°C	21	-
Wall (200 mm distance)	K	47	≤ 65
Floor	K	20	≤ 65
Ceiling, 1.4 m above floor ¹⁾	K	41	≤ 65
Outside surface of fire pit ²⁾	K	250	≤ 35

¹⁾ Some sparks can reach the ceiling and can cause higher temperatures than measured. Use of ceiling will be at the owners responsibility. Each load of wood should be small, and consist of hardwood like birch.

²⁾ You need tool or protective gloves to touch the fire pit during operation.

Appendices

A Evaluation of safety distances

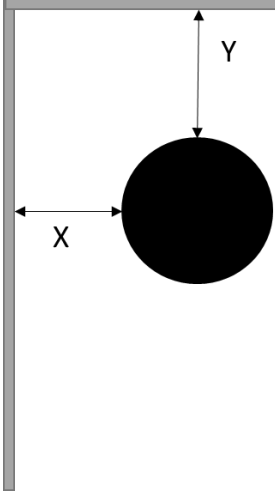
B Pictures

C Description of test item

Appendix A - Evaluation of safety distances

According to the test results from safety testing, distance from the stove to combustible walls has to be minimum 200 mm with wood and 200 mm with pellets.

Table 4: Declared minimum safety distances assessed by RISE Fire Research based on performed safety test of Mesa.

RISE evaluation of safety distances		
		
Mesa	Combustible wall	
	x [mm]	y [mm]
Minimum distances with wood	200	200
Minimum distances with pellets	200	200

Appendix B - Pictures



Picture 1: Mesa with spruce (fir timber)



Picture 2: Mesa with pellets.

Appendix C - Description of test item



SOLO STOVE FIRE PIT STAND

Instructions & Other Information



⚠ Must read before use. Failure to do so can result in serious injury or death.

Vor Gebrauch unbedingt lesen. Andernfalls sind schwere Verletzungen oder Todesfälle möglich. **HIER SCANNEN.**

À lire absolument avant toute utilisation. Le non-respect de cette consigne peut entraîner des blessures graves, voire mortelles. **SCANNER ICI.**

Leer antes de usar. El no hacerlo puede resultar en lesiones graves o muerte. **ESCANEE AQUÍ.**

Lezen voor gebruik. Het nalaten hiervan kan leiden tot serieuze verwondingen of de dood. **SCAN HIER.**

Da leggere prima dell'uso. In caso contrario, possono verificarsi lesioni gravi o morte. **SCANSIONA QUI.**

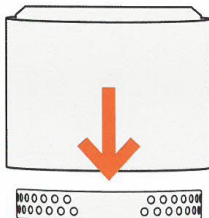
SCAN HERE



HOW TO USE YOUR FIRE PIT STAND

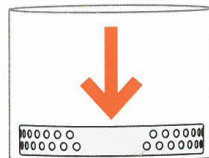
Step 1

Use your stand to provide extra protection to heat sensitive surfaces such as wood decks. Before lighting your fire pit, place the stand on a level surface and center your fire pit on top of the stand. Light your fire pit and enjoy!

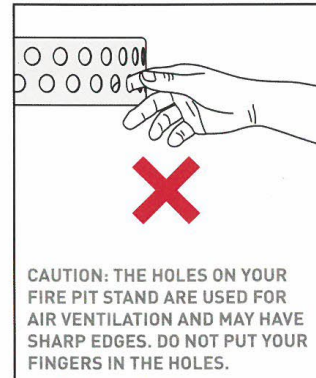


Step 2

For easy storage, place your fire pit stand directly inside your fire pit. Always place your fire pit in its carrying case or under its wetherproof cover (certain models) when not in use.



SAFETY WARNING



TIPS & WARNINGS ABOUT YOUR STAND

Your fire pit stand was designed to elevate your fire pit away from heat sensitive surfaces such as wood decks, but fire pits burn extremely hot, and hot air may still gather underneath. Please use with caution and at your own risk. Never leave your fire pit unattended unless the fire and coals are fully extinguished.

Composite decking (such as Trex, TimberTech, Azek, TIVA, Nexan, and Versadeck) differ significantly in quality and have varying heat resistance ratings. If you plan to use your fire pit and stand on composite decking please check with your manufacturer or builder to ensure your surface can handle high temperatures, or further elevate or insulate your fire pit to avoid potential damage.

FOR QUESTIONS OR COMMENTS, PLEASE VISIT SOLOSTOVE.COM/CONTACT

v1.0



SOLO STOVE FIRE PITS^{2.0}

Instructions & Other Information



⚠️ Must read before use. Failure to do so can result in serious injury or death.

Vor Gebrauch unbedingt lesen. Andernfalls sind schwere Verletzungen oder Todesfälle möglich. **HIER SCANNEN.**

À lire absolument avant toute utilisation. Le non-respect de cette consigne peut entraîner des blessures graves, voire mortelles. **SCANNER ICI.**

Leer antes de usar. El no hacerlo puede resultar en lesiones graves o muerte. **ESCANEE AQUÍ.**

Lezen voor gebruik. Het nalaten hiervan kan leiden tot serieuze verwondingen of de dood. **SCAN HIER.**

Da leggere prima dell'uso. In caso contrario, possono verificarsi lesioni gravi o morte. **SCANSIONA QUI.**

SCAN HERE



HOW TO USE YOUR SOLO STOVE FIRE PIT^{2.0}

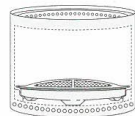
Step 1 Unwrap your Solo Stove fire pit. Remove the nested flame ring and set it aside.

Step 2 Remove all packaging and items inside the fire pit, including the ash pan and base plate.

Step 3 First, position the ash pan in the bottom center of the fire pit (A). Then, place the base plate in the center of the fire pit until it nests above the ash pan. Install the base plate with the dome pointed up (B).



(A)



(B)

Step 4 Start to build your fire by placing your tinder, kindling, and small wood pieces in the center of the fire pit.

For best results, do not overfill with wood that covers or extends above the upper vent holes.



Step 5 Light your fire.

Step 6 Place the flame ring back on top of the fire pit with the angled edges pointing upward.

This will provide protection from the wind and enhance the look of the flames.



Step 7 As your ember bed gets hotter, start adding in 1-3 pieces of wood. As those catch, add enough wood to fill the burn chamber.

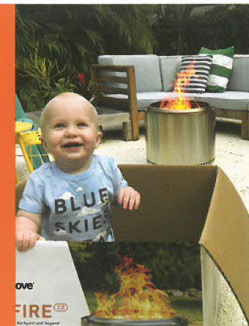
Step 8 When you're ready to call it a night, let the fire pit burn out on its own.

good moments,
SHARED

Follow us on social media @solostove and tag us in your good moments!



#solofirstburn



v1.0



CARE & USE

Caring for your fire pit correctly will maintain its look and prolong usability

First Use

When you first use your fire pit, the unique double-wall airflow within the unit will take approximately 5-15 minutes to achieve full efficiency. The more evenly your fire burns inside your fire pit, the more prominent the flame pattern showing the secondary combustion will appear.

Ash Removal

01. Empty the ashes after every fire to maintain optimal airflow and smokeless flames.
02. When the fire pit has completely cooled, brush the remaining ashes on the base plate into the holes to collect in the ash pan below.
03. Lift the removable base plate with two fingers and a thumb using the two center holes to access the ash pan.
04. Lift the ash pan out of the burn chamber and dispose of the ashes responsibly.
05. Clear all remaining debris, ash, and other particles from the burn chamber before replacing the ash pan.
06. Replace the base plate on top of the ash pan with the domed side pointed up.

Storage

It's important to keep rain and snow out of your fire pit. Solo Stove Shelter is a great cover option and can be purchased separately for all fire pits. For Ranger and Bonfire, you can also use the carrying case included with your purchase.

Prolonged exposure to moisture may result in increased staining or rusting. Due to extremely high temperatures inside, the fire pit may show signs of staining/rust. This is normal and will not affect normal use.

Prolonged exposure to harsh weather will increase rust and discoloration.

Patina

Due to extremely high temperatures, discoloration of the fire pit will occur and is considered normal. Stainless steel has an increased resistance to rust; however, it is not rust-proof.

Firewood

For best results, use dried and split hardwoods. Kiln-dried oak and juniper are excellent options.

Overfilling your fire pit above the upper vent holes will decrease efficiency and produce more smoke.

USER WARNINGS



WARNING! FOR OUTDOOR USE ONLY!

01. Do not use Solo Stove fire pits until you have read the operating instructions and user warnings. Serious injury, death, and/or property damage may occur.
02. Always use Solo Stove fire pits in accordance with all applicable local, state, and national codes. Contact your local fire department for details.
03. Solo Stove fire pits are not toys and can be dangerous. When using Solo Stove fire pits, exercise the same caution you would with an open fire.
04. Do not operate Solo Stove fire pits if under the age of 18 unless under strict adult supervision.
05. Never leave Solo Stove fire pits unattended while hot, especially when children and pets are nearby or when used on or near potentially combustible surfaces.
06. Do not alter or modify Solo Stove fire pits in any manner. Doing so could result in serious injury, death, and/or property damage.
07. Solo Stove fire pits are for outdoor use only.
08. Do not use Solo Stove fire pits for indoor heating. Toxic carbon monoxide can accumulate and cause asphyxiation and possibly death.
09. Do not use Solo Stove fire pits in a building, a garage, or any other enclosed area.
10. Do not use Solo Stove fire pits under any overhead or near any unprotected combustible constructions. Avoid using near any overhanging trees or shrubs.
11. Always use Solo Stove fire pits on a level, noncombustible surface.
12. NOTICE. Exercise extreme caution when using Solo Stove fire pits on or around combustible surfaces. Use on wood or composite decking is at your own risk and can lead to charring or ignition if not adequately elevated, insulated, or misused. Even when using Solo Stove Stand, wood and composite decking materials differ significantly in quality and have varying heat resistance ratings. Check with your manufacturer or builder to ensure your surface can handle high temperatures, or further elevate or insulate your fire pit to avoid potential damage.
13. Do not use gasoline, kerosene, diesel fuel, lighter fluid, alcohol, or any other flammable liquid to light or relight Solo Stove fire pits. Doing so can lead to serious injury or property damage, in particular if the flammable liquid pools in the bottom of the fire pit.
14. Do not lean over Solo Stove fire pits when lighting or when they are in use.
15. Solo Stove fire pits are extremely hot when in use. Never touch or attempt to move your fire pit during use or before it has completely cooled down.
16. Do not lean against or let any body part touch Solo Stove fire pits during use or after use until it has completely cooled down. Any direct contact may lead to serious injury whether accidental or otherwise.
17. Do not lean any objects against Solo Stove fire pits while in use.
18. Do not store or use gasoline or any other flammable vapors or liquids in the vicinity of Solo Stove fire pits while in use. Keep area around Solo Stove fire pits clear and free of any flammable or combustible materials.
19. Do not use Solo Stove fire pits on or near automobiles, trucks, vans, or recreational vehicles.
20. Keep all electrical cords away from Solo Stove fire pits.
21. Do not use Solo Stove fire pits in windy conditions.
22. Do not wear flammable or loose clothing when operating Solo Stove fire pits.
23. The use of alcohol, prescription, or non-prescription drugs may impair the consumer's ability to operate Solo Stove fire pits safely.
24. Solo Stove fire pits are designed for use with standard firewood logs and may not function properly with other fuel sources.
25. Do not use water to extinguish the fire as this could cause damage to the fire pit as well as injury to the user.
26. Dispose of ashes properly! Ashes should be placed into a metal container with a sealed metal lid. Ashes and embers can maintain heat and combustion can occur even after several hours.
27. After a period of nonuse, check your Solo Stove fire pit for signs of damage and creosote buildup. Do not operate until the necessary repairs and/or cleanup is done.
28. Solo Stove fire pits are not for commercial use.
29. Do not burn with the base plate upside down or without the ash pan in place.
30. The removable base plate may not always rest completely flat. The shape of the base plate may continuously fluctuate as it heats and cools. This is normal.
31. Do not throw logs into the fire pit as this may dent or damage the base plate.
32. Do not attempt to move the fire pit until it has completely cooled.

FOR QUESTIONS OR COMMENTS, PLEASE VISIT SOLOSTOVE.COM/CONTACT



LET'S PUT
OUR HEADS
TOGETHER.
TO KEEP
AHEAD.

RISE Fire Research AS

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