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**INSTALLATION MANUAL FOR
DURASKIRT™ PRO & PRONF
PANELS**

DURASKIRT™ AND BE DONE!



**HUD, VA & FHA APPROVED AS
A COMPONENT OF A
PERMANENT FOUNDATION
{HUD-7584, TYPE C, SECTION 100-2}**

AN INNOVATIVE SKIRTING PRODUCT FROM:

Manufacturer: DURASKIRT, LLC

PO BOX 97 - 12842 SR-9

Mount Vernon, WA USA 98273

Phone (360) 419-9909

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DURASKIRT.com

E-Mail RichardImus@DURASKIRT.com

Thank you for choosing DURASKIRT™

US PATENT # 6,901,709 B2



Purpose:

The purpose of **DURASKIRT PRO™** is to provide the customer with concrete skirting that:

- Withstands back-fill. – SEE ENGINEERING REPORT ON PAGE 23 -
- Provides Customers with a long-lasting waterproof concrete skirting with PENETRON™ - SEE PAGES 28-30 -
- Is easy to install with just one person.
- Will give the home a site-built appearance.
- Costs less than a stem wall foundation.
- Is easy to maintain.
- Resists all weather conditions.
- HOUSING and URBAN DEVELOPMENT's **Title 24 3285.2** – SEE PAGES 24, 25, 22 and 23 –
- MEETS 2021 International Wildland-Urban Interface Code (IWUIC) & ASTM 84 Fire Rated (Found on Submittals page on website DURASKIRT.com/ wp-content/uploads/2024/05/ASTM-E84-Ground-Contact-Rating.pdf
- Rated for ground burial for all soils and weather conditions (special venting and/or engineering may be needed for flood plains. You may need to purchase our Flood-Vents. Panels can be engineered for break-away panels in severe flash-flood areas.)
- Meets HUD handbook “Permanent Foundation Guild for Manufactured Housing” publication HUD-7584 – SEE PAGES 21 & 23 -
- Has a Warranty – SEE PAGES 26 & 27 -

Statement:

DURASKIRT™ kits are a complete concrete panel skirting system. The kits include concrete panels, attachment hardware & screws, ventilation, crawl space access points and joint concealing products. Best of all, they come with complete instructions, videos and professional phone support. 360-419-9909

- SEE PAGE 25 for Engineered Installation Drawing.

DURASKIRT™ PRO & PRONF:

- PRO PANELS are available in either 24”, 30”, 33” or 37” tall panels.
- PRO30 Panels weigh approximately 68 lbs. / 32 kg.
- PRO Panel have anchor fabric at bottom edge
- DURASKIRT™ PRO height dimensions are 24”, 30”, 33” & 37”
- PRO & PRONF PANELS are ¾” thickness.
- Drive Pins Provided for PRONF PANELS – SEE Engineered DRWG. PAGE 25 -

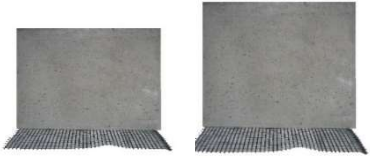






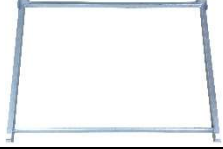

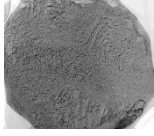
NOTE

*The crates are designed with empty space for your use.
Use this space for other products from our line of
Construction hardware and supplies*

Call (360) 419-9909

PARTS LIST

NOTE: FOR SLABS WHERE THERE IS NO BACKFILL USE NON-FABRIC PANELS or PRONF SERIES – DRIVE PINS PROVIDED.

<p>24", 30", 33" & Tall x 37" Wide</p> <p>PRO24 PRO30/33</p>  <p>ALSO, For Non-Fabric – SEE NOTE↑</p> <p>PRO24NF, PRO30NF, PRO33NF</p>	<p>37" Tall x 30" Wide</p> <p>PRO37</p> 
<p>Joist Fastener for Vent</p> <p>2" offset</p> <p>#JF178</p> 	<p>Standard Joist Fastener</p> <p>3/4" offset.</p> <p>#JF34</p> 
<p>Hidden Vent Screen</p> <p>4" x 36" 1/4" x 1/4" screen sections</p> <p>Rated: 36 sq/in #HV36</p> 	<p>30" Access Door Kit</p> <p>#AD30</p> 
<p>10" Hand Access Kit</p> <p>#AD10</p> 	<p>Access Well Frame</p> <p>25" x 36"</p> <p>#AWF</p> 
<p>Concrete Color Caulk</p> <p>10 oz tube</p> <p>#AS-CG10</p> 	<p>JOINT CONCEALER</p> <p>1 Gallon Bag of Cement Blend</p> <p>#AS-JC</p> 



Preparing for Installation:

DURASKIRT PRO™ panels are easy to install. In this manual we will:

- Recommend which safety supplies and tools you will need
- Assist you with code requirements.
- Although our kits come complete, this manual helps us with material take-offs.
- How you to successfully install **DURASKIRT™** on your home whether on a slab, native dirt or gravel pad.
- Please read the manual carefully before installing and pay close attention to the warnings given throughout the manual and thanks again for choosing **DURASKIRT™**.

Safety First

- **Safety supplies list:**
 - Dust mask (either 3M-8210 or 3M-8212)
 - Ear protection
 - Eye protection
 - Proper protective clothing, gloves and boots with toe protection.
 - Mask, ear and eye protection available for purchase
- **Safety precautions and safe work techniques:**
 - Always make sure your path is clear while carrying the panels.
 - Wear eye protection always during installation.
 - Wear protective clothing. Some parts are sharp or heavy.
 - Use proper lifting techniques while installing the panels to prevent back injuries.
 - When working together, make sure the other person is aware of what you are doing to avoid injuries.
 - Keep your fingers clear of pinch points.
 - Wear a dust mask or respirator while cutting concrete to avoid inhalation.
 - Visit our website for more information on safely receiving and unpackaging **DURASKIRT™** crates. [Receiving DURASKIRT™ Skirting Packages - DURASKIRT™ for Life!](#)

Tool List

- Cordless drill
- Either a demo saw or a Skill-Saw
- Diamond concrete blade
- T20 torque head bit
- Tape measure
- Pencil or marking pen
- Straight edge and square
- Torpedo level or short level
- Gas or elec. concrete cutting saw & concrete cutting blade.
- Hammer -16 oz. to 20 oz.
- Caulking gun with tip cutter
- Roto-hammer with 1/4" bit (Only for the access door kit)
- Chalk line (For belly band installation)
- 3/16" steel drill bit (For drilling through the steel beam on homes that are not foundation ready)
- 8d Box nails (For belly band)

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Home Manufacturer and Code requirements

- **Panel to Rim Joist Gap**
 - A gap needs to be maintained between the skirting panels and the untreated rim joist.

- **Soil Loading Pressure**
 - **DURASKIRT™ PRO & PRONF** must be installed on the same approved surface that the home is supported from. A typical minimum weight bearing surface is 1000PSF. **DURASKIRT™ PRO & PRONF** does not exceed 365PSF. **DURASKIRT™ PRO & PRONF** panels do not require a footing to support them (**DURASKIRT™ PRO & PRONF** is not designed to bear the load of the home.).

- **Gas Meter to Vent Distance**
 - LP and Natural gas have ventilated diaphragms usually located just outside the skirting and require that the foundation vents maintain a setback of 3'-5' (Check with your local code enforcement agency for more details.). The hidden vent will need to be plugged off in this section.

- **Crawlspace Location**
 - Crawlspace access points are usually located near the water shutoff (Check with your local code enforcement agency for more details.).

- **Appliance Vents and Drains**
 - Dryer vents, Kitchen downdrafts, Hot water blow-offs, Sewer pipes and other utility drains must be supported and have a downward slope all the way out through the skirting (Check with your local code enforcement agency for more details.).

- **Flood Plains**
 - Flood Plain regions will affect your ventilation. 100-year flood fringe areas require additional vents within 12" of the bottom of the crawlspace (Check with your local code enforcement agency for more details.). Please let us know when ordering so we can include them with your order. We make a metal style flood ventilation system that we include upon request. You will still be required to install the hidden vent.

Material takeoff chart

Use the table on the next pages to determine the amount of materials needed for your project:

Home Length	Panel Height	Qty	Home width in feet.					
			14		28		42	
20	30"	Panels	26	With Door Kit	35	With Door Kit	44	With Door Kit
			29	With Well Kit	38	With Well Kit	47	With Well Kit
		Large Joist Fasteners	17		17		48	
		Small Joist Fasteners	14		23		0	
		Vent Screen	22		22		58	
		Screws	112		131		223	
		Caulking Tubes	3		4		5	
	37"	Panels	31	With Door Kit	42	With Door Kit	53	With Door Kit
			34	With Well Kit	45	With Well Kit	56	With Well Kit
		Large Joist Fasteners	20		20		20	
		Small Joist Fasteners	16		27		38	
		Vent Screen	22		22		58	
		Screws	122		145		244	
		Caulking Tubes	4		5		6	
24	30"	Panels	28	With Door Kit	37	With Door Kit	46	With Door Kit
			31	With Well Kit	40	With Well Kit	49	With Well Kit
		Large Joist Fasteners	20		20		50	
		Small Joist Fasteners	14		23		1	
		Vent Screen	25		25		61	
		Screws	124		143		236	
		Caulking Tubes	4		4		5	
	37"	Panels	34	With Door Kit	45	With Door Kit	56	With Door Kit
			37	With Well Kit	48	With Well Kit	59	With Well Kit
		Large Joist Fasteners	24		24		24	
		Small Joist Fasteners	16		27		38	
		Vent Screen	25		25		61	
		Screws	137		160		259	
		Caulking Tubes	4		5		6	
28	30"	Panels	31	With Door Kit	40	With Door Kit	49	With Door Kit
			34	With Well Kit	43	With Well Kit	52	With Well Kit
		Large Joist Fasteners	23		23		53	
		Small Joist Fasteners	14		23		2	
		Vent Screen	28		28		64	
		Screws	4		5		5	
		Caulking Tubes	0		0		0	
	37"	Panels	37	With Door Kit	48	With Door Kit	59	With Door Kit
			40	With Well Kit	51	With Well Kit	62	With Well Kit
		Large Joist Fasteners	27		27		27	
		Small Joist Fasteners	16		27		38	
		Vent Screen	28		28		64	
		Screws	150		173		271	
		Caulking Tubes	4		5		6	

Home Length	Panel Height	Qty	Home width in feet.					
			14		28		42	
32	30"	Panels	33	With Door Kit	42	With Door Kit	52	With Door Kit
			36	With Well Kit	45	With Well Kit	55	With Well Kit
		Large Joist Fasteners	25		25		56	
		Small Joist Fasteners	14		23		2	
		Vent Screen	32		32		68	
		Screws	150		168		265	
	Caulking Tubes	4		5		5		
	37"	Panels	40	With Door Kit	51	With Door Kit	63	With Door Kit
			43	With Well Kit	54	With Well Kit	66	With Well Kit
		Large Joist Fasteners	30		30		30	
		Small Joist Fasteners	16		27		38	
		Vent Screen	32		32		68	
		Screws	164		187		286	
	Caulking Tubes	5		5		6		
36	30"	Panels	36	With Door Kit	45	With Door Kit	54	With Door Kit
			39	With Well Kit	48	With Well Kit	57	With Well Kit
		Large Joist Fasteners	28		28		58	
		Small Joist Fasteners	14		23		3	
		Vent Screen	35		35		71	
		Screws	162		181		278	
	Caulking Tubes	4		5		6		
	37"	Panels	43	With Door Kit	55	With Door Kit	66	With Door Kit
			46	With Well Kit	58	With Well Kit	69	With Well Kit
		Large Joist Fasteners	33		33		33	
		Small Joist Fasteners	16		27		38	
		Vent Screen	35		35		71	
		Screws	177		200		299	
	Caulking Tubes	5		6		7		
40	30"	Panels	39	With Door Kit	48	With Door Kit	57	With Door Kit
			42	With Well Kit	51	With Well Kit	60	With Well Kit
		Large Joist Fasteners	30		30		61	
		Small Joist Fasteners	14		23		3	
		Vent Screen	39		39		75	
		Screws	175		194		292	
	Caulking Tubes	4		5		6		
	37"	Panels	47	With Door Kit	58	With Door Kit	69	With Door Kit
			50	With Well Kit	61	With Well Kit	72	With Well Kit
		Large Joist Fasteners	36		36		36	
		Small Joist Fasteners	16		27		38	
		Vent Screen	39		39		75	
		Screws	192		215		313	
	Caulking Tubes	5		6		7		

Home Length	Panel Height	Qty	Home width in feet.					
			14		28		42	
44	30"	Panels	41	With Door Kit	50	With Door Kit	59	With Door Kit
			44	With Well Kit	53	With Well Kit	62	With Well Kit
		Large Joist Fasteners	33		33		63	
		Small Joist Fasteners	14		23		4	
		Vent Screen	42		42		78	
		Screws	187		206		305	
		Caulking Tubes	5		5		6	
	37"	Panels	50	With Door Kit	61	With Door Kit	72	With Door Kit
			53	With Well Kit	64	With Well Kit	75	With Well Kit
		Large Joist Fasteners	40		40		40	
		Small Joist Fasteners	16		27		38	
		Vent Screen	42		42		78	
		Screws	206		229		328	
		Caulking Tubes	5		6		7	
48	30"	Panels	44	With Door Kit	53	With Door Kit	62	With Door Kit
			47	With Well Kit	56	With Well Kit	65	With Well Kit
		Large Joist Fasteners	36		36		66	
		Small Joist Fasteners	14		23		4	
		Vent Screen	46		46		82	
		Screws	202		221		320	
		Caulking Tubes	5		6		6	
	37"	Panels	53	With Door Kit	64	With Door Kit	75	With Door Kit
			56	With Well Kit	67	With Well Kit	78	With Well Kit
		Large Joist Fasteners	43		43		43	
		Small Joist Fasteners	16		27		38	
		Vent Screen	46		46		82	
		Screws	221		244		343	
		Caulking Tubes	6		7		7	
52	30"	Panels	46	With Door Kit	55	With Door Kit	65	With Door Kit
			49	With Well Kit	58	With Well Kit	68	With Well Kit
		Large Joist Fasteners	38		38		69	
		Small Joist Fasteners	14		23		5	
		Vent Screen	49		49		85	
		Screws	213		231		334	
		Caulking Tubes	5		6		7	
	37"	Panels	56	With Door Kit	67	With Door Kit	79	With Door Kit
			59	With Well Kit	70	With Well Kit	82	With Well Kit
		Large Joist Fasteners	46		46		46	
		Small Joist Fasteners	16		27		38	
		Vent Screen	49		49		85	
		Screws	234		257		355	
		Caulking Tubes	6		7		8	

Home Length	Panel Height	Qty	Home width in feet.					
			14		28		42	
56	30"	Panels	49	With Door Kit	58	With Door Kit	67	With Door Kit
			52	With Well Kit	61	With Well Kit	70	With Well Kit
		Large Joist Fasteners	41		41		71	
		Small Joist Fasteners	14		23		5	
		Vent Screen	52		52		88	
		Screws	225		244		345	
	Caulking Tubes	5		6		7		
	37"	Panels	59	With Door Kit	71	With Door Kit	82	With Door Kit
			62	With Well Kit	74	With Well Kit	85	With Well Kit
		Large Joist Fasteners	49		49		49	
		Small Joist Fasteners	16		27		38	
		Vent Screen	52		52		88	
		Screws	246		269		368	
	Caulking Tubes	6		7		8		
60	30"	Panels	52	With Door Kit	61	With Door Kit	70	With Door Kit
			55	With Well Kit	64	With Well Kit	73	With Well Kit
		Large Joist Fasteners	43		43		74	
		Small Joist Fasteners	14		23		6	
		Vent Screen	56		56		92	
		Screws	238		257		362	
	Caulking Tubes	5		6		7		
	37"	Panels	63	With Door Kit	74	With Door Kit	85	With Door Kit
			66	With Well Kit	77	With Well Kit	88	With Well Kit
		Large Joist Fasteners	52		52		52	
		Small Joist Fasteners	16		27		38	
		Vent Screen	56		56		92	
		Screws	261		284		383	
	Caulking Tubes	6		7		8		
64	30"	Panels	54	With Door Kit	63	With Door Kit	72	With Door Kit
			57	With Well Kit	66	With Well Kit	75	With Well Kit
		Large Joist Fasteners	46		46		76	
		Small Joist Fasteners	14		23		6	
		Vent Screen	59		59		95	
		Screws	250		269		372	
	Caulking Tubes	6		6		7		
	37"	Panels	66	With Door Kit	77	With Door Kit	88	With Door Kit
			69	With Well Kit	80	With Well Kit	91	With Well Kit
		Large Joist Fasteners	56		56		56	
		Small Joist Fasteners	16		27		38	
		Vent Screen	59		59		95	
		Screws	276		299		397	
	Caulking Tubes	7		8		9		

Home Length	Panel Height	Qty	Home width in feet.					
			14		28		42	
68	30"	Panels	57	With Door Kit	66	With Door Kit	75	With Door Kit
			60	With Well Kit	69	With Well Kit	78	With Well Kit
		Large Joist Fasteners	49		49		79	
		Small Joist Fasteners	14		23		7	
		Vent Screen	63		63		99	
		Screws	265		284		389	
		Caulking Tubes	6		7		7	
	37"	Panels	69	With Door Kit	80	With Door Kit	91	With Door Kit
			72	With Well Kit	83	With Well Kit	94	With Well Kit
		Large Joist Fasteners	59		59		59	
		Small Joist Fasteners	16		27		38	
		Vent Screen	63		63		99	
		Screws	290		313		412	
		Caulking Tubes	7		8		9	
72	30"	Panels	59	With Door Kit	68	With Door Kit	78	With Door Kit
			62	With Well Kit	71	With Well Kit	81	With Well Kit
		Large Joist Fasteners	51		51		82	
		Small Joist Fasteners	14		23		7	
		Vent Screen	66		66		102	
		Screws	276		294		402	
		Caulking Tubes	6		7		8	
	37"	Panels	72	With Door Kit	83	With Door Kit	95	With Door Kit
			75	With Well Kit	86	With Well Kit	98	With Well Kit
		Large Joist Fasteners	62		62		62	
		Small Joist Fasteners	16		27		38	
		Vent Screen	66		66		102	
		Screws	303		326		425	
		Caulking Tubes	7		8		9	
76	30"	Panels	62	With Door Kit	71	With Door Kit	80	With Door Kit
			65	With Well Kit	74	With Well Kit	83	With Well Kit
		Large Joist Fasteners	54		54		84	
		Small Joist Fasteners	14		23		8	
		Vent Screen	70		70		106	
		Screws	290		309		416	
		Caulking Tubes	6		7		8	
	37"	Panels	75	With Door Kit	87	With Door Kit	98	With Door Kit
			78	With Well Kit	90	With Well Kit	101	With Well Kit
		Large Joist Fasteners	65		65		65	
		Small Joist Fasteners	16		27		38	
		Vent Screen	70		70		106	
		Screws	318		341		439	
		Caulking Tubes	7		8		9	

Home Length	Panel Height	Qty	Home width in feet.					
			14		28		42	
80	30"	Panels	65	With Door Kit	74	With Door Kit	83	With Door Kit
			68	With Well Kit	77	With Well Kit	86	With Well Kit
		Large Joist Fasteners	56		56		87	
		Small Joist Fasteners	14		23		8	
		Vent Screen	73		73		109	
		Screws	301		320		429	
	Caulking Tubes	7		7		8		
	37"	Panels	79	With Door Kit	90	With Door Kit	101	With Door Kit
			82	With Well Kit	93	With Well Kit	104	With Well Kit
		Large Joist Fasteners	68		68		68	
		Small Joist Fasteners	16		27		38	
		Vent Screen	73		73		109	
		Screws	330		353		452	
	Caulking Tubes	8		9		10		
84	30"	Panels	67	With Door Kit	76	With Door Kit	85	With Door Kit
			70	With Well Kit	79	With Well Kit	88	With Well Kit
		Large Joist Fasteners	59		59		89	
		Small Joist Fasteners	14		23		9	
		Vent Screen	76		76		112	
		Screws	313		332		441	
	Caulking Tubes	7		8		8		
	37"	Panels	82	With Door Kit	93	With Door Kit	104	With Door Kit
			85	With Well Kit	96	With Well Kit	107	With Well Kit
		Large Joist Fasteners	72		72		72	
		Small Joist Fasteners	16		27		38	
		Vent Screen	76		76		112	
		Screws	345		368		467	
	Caulking Tubes	8		9		10		
88	30"	Panels	70	With Door Kit	79	With Door Kit	88	With Door Kit
			73	With Well Kit	82	With Well Kit	91	With Well Kit
		Large Joist Fasteners	62		62		92	
		Small Joist Fasteners	14		23		10	
		Vent Screen	80		80		116	
		Screws	328		347		458	
	Caulking Tubes	7		8		9		
	37"	Panels	85	With Door Kit	96	With Door Kit	107	With Door Kit
			88	With Well Kit	99	With Well Kit	110	With Well Kit
		Large Joist Fasteners	75		75		75	
		Small Joist Fasteners	16		27		38	
		Vent Screen	80		80		116	
		Screws	360		383		481	
	Caulking Tubes	8		9		10		

Hidden Vent Requirements/Calculator

1) **Code Requires** a ratio of 1 sq. ft vent to 150 sq. ft of crawlspace.

2) **Home Widths:**

The Hidden-Vent allows 1.25 square inches of airflow up and over the panels. Therefore, using DURASKIRT™ Hidden-Vent you will need to vent the **two long sides of homes up to 31' 3" in width. Likewise, Homes that are over 31'-3" wide will need venting on all four sides of home.**

***For a ratio of 1 sq. ft vent to 300 sq. ft of crawlspace. Home length up to 62' 6" Install on both short ends of the home only.**

3) **How to calculate hidden vent.**

- i. Homes length x width = A
- ii. $A/150$ (sf) = B
- iii. B = the sf of vent needed
- iv. $B \times 12''$ = C is the total sq. inch of vent area
- v. $C/1.25$ = D is the lineal feet of hidden vent needed.



Mathematical Calculation Example:

Home Size: **Step 1)** $66 \times 27 = 1,782$ (Square Feet)

Step 2) $1,782/150 = 11.88$
(Square Feet of venting needed)

Step 3) $11.88 \times 12 = 142.56$ (this gives the number of linear feet needed at 1")

The next step to calculate the linear feet at 1" and dividing the DURASKIRT™ PRO & PRONF Skirting Panels actual airflow 1.25" over the panels.

Step 4) $142.56/1.25 = 114.048$ L.F. (This is the needed venting)

Results:

Subsequently, a 66' home has two long sides totaling 132 linear feet and the actual needed Linear feet is 114.048 thus, giving an extra 17.952 extra Hidden-Ventilation.



Things to consider before starting your installation

**These installation steps are only guidelines.* Please feel free to use your own methods so long as it results in the DURASKIRT™ PRO & PRONF being installed and supported properly. There are certain things that must be done to the manufacturer's specifications.

There are many ways of getting your job done the way that fits best for your needs. Every home must be treated differently. You will need to narrow down all the options to the ones that will work for you.

Below is a list of things that will affect your decisions now so that in the end you will get the job done the way that pleases you most.

- **What will the face of the panel be in line with?**
 - The face of the homes siding?
 - The front of the rim joist?
 - Other?
- **Panel height?**
 - Will you need to cut them to height?
 - Panels can be cut, notched and perforated.
 - Will you be filling under them?
 - Will you be digging into the ground?
- **Bellyband trim?**
 - Will you need to install bellyband?
 - What size?
 - What type?
 - Will you tuck the panels behind an existing bellyband or siding?
 - Will you install metal drip cap or z-metal?
- **Crawlspace access?**
 - Determine the location.
 - How many?
 - What type?
 - Well with lid (Used when backfilling).
 - Door with handles (Used w/o backfill).
- **LP/Natural Gas**
 - Does the home have LP/Natural gas?
 - Vent layout will be affected (see pg. 6, Home Manufacturer and Code Requirements, under Gas Meter to Vent Distance)
 - On gravel/dirt pads
 - Gas piping needs to be installed above the concrete panel. This will keep the panel from exerting pressure on the pipe as the panel moves during freeze, thaw and settling.
 - If the gas pipe is installed through the skirting, then the panel will need to be placed on a concrete or pressure treated pad on bearing soil to prevent the panel from settling.
 - Panels should be cut to place the gas pipe in the middle of two adjoining panels.
- **Electrical/Water**
 - If utilities are at the bottom edge of the skirting
 - Notch the panel over them.
 - If utilities are coming through the skirting surface
 - A joint in the panels will need to be placed at the utility

- Notch the edge of a panel and slide it against another panel placing the utility pipe in the notched-out area.
- **Dryer vent, Kitchen downdraft vent, Hot water blow off, Sewer pipes and other utility drains.**
 - Vents, pipes and tubes that can be assembled through the skirting
 - Do not need to fall on a joint in the skirting.
 - Can go through a hole in the skirting.
 - Crawlspace Ventilation (There are two types)
 - Positive air flow (Metal, Plastic or Hidden Vent).
 - Metal flood vents (available upon request)
 - Plastic Vent (not sold by us)
 - You will need to determine the quantity and layout.
 - Hidden Vent
 - Determine how many sides will need the vent screen (pg. 13)
 - Mechanical ventilator (Purchase separately)
- **Flood Plain Regions**
 - Usually flood requirements can be met by lowering the foundation vents to within 12” of the bottom of the crawlspace (Check with your local code enforcement agency for more details.).
 - Vents that are installed mid-range of the panel height must be placed at a joint.
 - Notch either one panel or both and slide them together locking the vent in between the joint.
 - The Backfill must stay below the vents.
 - Some Jurisdictions require the hidden vent in addition to the flood vents.

Start Installing:

Installation Tips

- **Cutting the skirting material**
 - Cuts can be made anywhere on the panels.
 - Start all cuts on the face of the panel and cut through to the back.
 - Use a concrete cutting blade (Available for purchase).
 - Some cuts may require that you add additional Joist Fasteners or other additional bracing.
- **Making a hole through the skirting.**
 - Holes can be put anywhere in the surface and be almost any size.
 - The best way to make a hole is to use a small bit in a roto-hammer or hammer and chisel and chip through the panel from the face and allow it to break out the back along the perimeter of the hole.
 - Then tap out the remaining concrete with a hammer to the desired size.
 - Cut the reinforcing wire to clear the opening.

- **Install the panels with anchor fabric at the bottom of the panel with the fabric extended perpendicular to the panel on the side of the panel that the backfill will be.**
 - Note: The panels are marked on the back side of each one. They must be installed correct or they will fail to hold the backfill. The mark must be on the side opposite of the backfill.
- **If panels need cut to height**
 - Either cut them all now
 - Or cut them as you go
 - Note: Cut the top edge off so the fabric will remain in the bottom of the panels.
- **Panel Support.**
 - Each panel must be supported at the top corners with a joist fastener. The fastener can span the joint to support the upper corners of two panels. The joist fastener must be within ½” of center of the joints.
 - Start installing panels at a corner. Panels overlap at the corners.

Installation Steps



- 1st Install the belly band, drip cap or siding to hang down below the rim joist at least 2”.
 - 2” white drip cap can be purchased at a local roofing supplier.
- 2nd Install a Joist Fastener within 6” each direction of the corner with 2-4 screws each to support one of the 2 corner panels.
 - Make sure to use the small joist fastener for the panels that will not need hidden vent and large joist fasteners for the panels that need hidden vent.
- 3rd Set in place the 2 panels which will make the corner, with the back side facing under the home. Overlap the edges to your desired appearance (Most of the time the joint between the panels can be hidden behind a rain water down spout if they are overlapped properly.). Adjust them to be plumb. Make sure, the overlap at the corner is lined up and where you are positioning it.
- 4th Repeat steps 2 & 3 for all additional corners.
- 5th Install Joist Fasteners at the opposite top corners of the panels that are farthest from the corner of the home. Be sure to split the fastener in half at the edge of the panel because these fasteners will be supporting the next panel also.
- 6th Plumb both panels and double check the alignment along the vertical joint at the corner.
- 7th Position the anchor fabric flat on the ground extending outward (away from the home) on the side of the panels that the backfill will be against.
- 8th Take a hidden vent screen piece in your hands and starting at one end begin to form the screen into an open “U” shape. Work your way along the screen forming as you go until the 36” piece is all formed as shown in the photo to the left.



- 9th Install the hidden vent screen between the siding and the panel by pressing it upward into the gap. Start at one end and work to the other. Don't try to press it all the way up into the gap. You're just trying to go up high enough to conceal the screen behind the siding.
- Secure with at least 2 screws per vent. One at the starting end of the screen and one in the middle. Don't tighten screws to much or they will pull through the screen.
 - In step 10: Overlap the screens by at least 1" and place a screw into the rim joist through the overlapped section.
- 10th Place the next panel against the Joist Fastener that was installed at the end of the panel you just installed. Support underneath the panel so the vertical joint has a gap of 1/16"-1/8" from the previous panel.
- 11th Repeat steps 5 – 10 until all panels are in place.
- 12th Install the Crawl Access



Door

- Place a panel on each side of the opening using the Spreader Bar between them to determine the opening (30")
- Cut a panel vertically to make a 30" wide piece.
- Determine the desired height of the opening and cut the panel horizontally with the fabric at the bottom edge.
- The upper piece without fabric will be the access door.
- Install the handles with a roto-hammer and a 1/4" drill bit.
- Place the cut piece with fabric in the crawl opening and put the Spreader Bar on top to hold it in place. (The 1/2" sides of the channel extend downward over the cut piece)
 - Put a bead of caulking under the spreader bar to glue it to the cut piece.
 - The "ears" of the Spreader Bar can be bent to tighten onto the panels on either side of the opening.
- Put the access door in place
 - The top corners are supported by the Joist Fasteners
 - If you're using the hidden-vent, then you must install a piece of 2" drip cap or a wood block in front of the door between the upper edge of the door and the belly band.



Well Installation – Watch YouTube Video



- Place a panel on each side of the opening using the Access Well Frame between them to determine the opening (34 ½”)
- When finished
 - The lid should be tight underneath the belly band or siding
 - The lid should slope at least 2” from the home downward to the outermost edge of the well
- First cut the two sides of the well making sure to leave the fabric at the bottom edge.
 - The height will need to be determined at the site.
 - The width is typically (may vary) 24 1/8”
 - The top edge needs cut to with a 2” slope away from the house.
 - Install the sections with the Access Well Frame on top to hold them in place
- Cut the front piece to height and width (35 ½”)
 - Install under the front edge of the Access Well Frame
- Cut a panel to use as the lid.
 - The lid will be 37” x 25 ½” (Cut the fabric edge off)
 - Select from the panels one that is free of chips

13th Installation of panels is complete.

14th Conceal the joints with the caulking.

- Cut tube end at sharp angle near the tip to keep a small opening.
- Begin caulking at the bottom of the joint and move upward to the top of the joint.
- Make sure the caulking is going deep into the joint.
- Avoid spreading the caulking onto the surface of the panels.
- Scrape off the excess caulk (Do Not Wipe). The empty caulking tube works great (Turn it upside down and use the hollow end to scrape with. The excess caulking will fall into the empty tube.)

15th Wearing Dust Mask, Conceal the joints with the Dry Cement Blend.

- Rub the dry cement onto the wet caulking.
- Excess caulking will also come off at this time.
- Repeat 11 and 12 on all the joints and around utilities.

- Steps 11 and 12 are best done on a dry day or at least have the rain gutters and downspouts installed ahead of time.

***Optional: Installing plastic vents or metal flood vents**

- 1st Make a template to use for all the vents.
 - The template needs to be 16” wide x?” high.
 - The height can be different on each home depending on how much of the vent needs to show below the bellyband or siding.
- 2nd Use the template to mark all the cuts in all the panels that you will need vents.
- 3rd Cut through the panel from the face side, cutting along the three marks.
- 4th Remove cut-out piece.
- 5th Install the vent.

Installation Is Now Complete!

Backfilling Instructions:

- Pro Panels can hold dry backfill up to 6” from the top
- Do not use saturated backfill
- Do not mechanically compact next to skirting. Walking the fill in tight is recommended. (If compacting is desired then the panels will need to have additional support.)
- Do not push backfill against the skirting with a machine.
- Do not drive on backfill next to the skirting.
- Additional bracing will need to be installed if you need to exceed the limits listed above.

Precautions:

- Some soil PH levels can be corrosive to concrete and steel.
 - You may want to install a protective barrier such as:
 - Black plastic
 - Paint
 - Coal tar epoxy
 - Other approved sealer
- DURASKIRT is not designed as a water barrier.
 - You will need to install a drain or use some other method to redirect water away from the crawlspace.
- DURASKIRT is not designed as a form to hold wet concrete being poured against it.
 - You may need to reinforce it to withstand the added pressure.



Special State Instructions:

Nevada:

- Requires a 6mil black plastic between the earth and DURASKIRT™ material.
 - Place plastic against the skirting before backfilling.
 - Once backfill is complete cut the excess plastic off that is showing above the finished ground level.

Arizona:

- Requires Compliance with Regulations Relating to Housing and Urban Development Code 3285.2 Manufacture Installation Instructions.
- SEE PAGES beginning with 25, 26, 22 and 23 -



Peter Chopelas, PE

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February 26, 2023

DURASKIRT

PO BOX 97
12842 SR-9
Mount Vernon, WA 98273

Subject: Duraskirt™ manufactured home perimeter skirt wall system HUD compliance

The subject Duraskirt™ manufactured home perimeter skirt wall system was review for compliance with the current HUD handbook “Permanent Foundation Guild for Manufactured Housing” publication HUD- 7584.

It was found that the Duraskirt system meets all the requirements for foundation Type C. These are systems that structurally support and anchor the home at the chassis, per section 100-2. Since perimeter walls may or not be used to structurally support or anchor the home, the Duraskirt™ will meet HUD guidelines. Furthermore, it is composed of rot resistant materials (concrete) and contains screened ventilation openings to meet the other requirements for Exterior perimeter foundations walls.

The design and strength of the Duraskirt™ system has generous safety factors for the applied loads of wind and seismic forces, plus the back fill loads against the skirting if installed per the manufacturer’s recommendations.

If you have any questions or need further assistance, please feel free to call. Sincerely,



Peter Chopelas PE



2401 E. Taxidea Way
Phoenix, AZ. 85048
e-mail: ralph@bbacaengineering.com
website: www.bbacaengineering.com

Phone Number: 480-706-6222
FAX Number: 480-706-9330

Date: July 27, 2024

Client: DURASKIRT
PO Box 279
Mount Vernon, WA 98273

Project Description: Duraskirt™ Manufactured Home Perimeter Skirting Wall System HUD compliance
Project Report: 240126-1054E

The subject Duraskirt™ manufactured home perimeter skirt wall system was review for compliance with the current HUD handbook "Permanent Foundation Guild for Manufactured Housing" publication HUD-7584.

It was found that the Duraskirt system meets all the requirements for foundation Type C. These are systems that structurally support and anchor the home at the chassis, per section 100-2. Since perimeter walls may or not be used to structurally support or anchor the home, the Duraskirt™ will meet HUD guidelines. Furthermore, it is composed of rot resistant materials (concrete) and contains screened ventilation openings to meet the other requirements for Exterior perimeter foundations walls.

The design and strength of the Duraskirt™ system has generous safety factors for the applied loads of wind and seismic forces, plus the back fill loads against the skirting if installed per the manufacturer's recommendations.

If you have any questions or are in need of further assistance, please feel free to call.

Sincerely,



Approved by Glen L. Hunt III, P.E

BBACA ENGINEERING, LLC. HOME & BUILDING INSPECTION SPECIALISTS
2401 E. TAXIDEA WAY - PHOENIX, AZ. 85048 480-706-6222



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July 3, 2024

Richard Imus
DURASKIRT, LLC
12842 SR-9
Mount Vernon, WA 98273

Mailing:
PO BOX 97
MOUNT VERNON, WA 98273

Phone: 360-420-6889

Subject: Duraskirt™ manufactured home perimeter skirt wall system and HUD compliance

The subject Duraskirt™ manufactured home perimeter skirt wall system was review for compliance with the current HUD handbook “Permanent Foundation Guild for Manufactured Housing” publication HUD-7584. And for Lateral strength for back filled installations.

It was found that the Duraskirt system meets all of the requirements for foundation Type C. These are systems that structurally support and anchor the home at the chassis, per section 100-2. Since perimeter walls may or not be used to structurally support or anchor the home, the Duraskirt™ will meet HUD guidelines. Furthermore it is composed of rot resistant materials (concrete) and contains screened ventilation openings to meet the other requirements for Exterior perimeter foundations walls.

The design and strength of the Duraskirt™ system has generous safety factors for the applied loads of wind and seismic forces, plus the back fill loads against the skirting if installed per the manufacturer’s recommendations.

The 30” tall panel was tested for a full backfill height in a jig that simulated normal installation conditions. It was backfilled with compacted medium sand to the top of the 30” tall panel, with no significant deformation of the panel, nor any viable damage or signs of stress or an overloaded condition. The sand has measured dry weight at 110 PCF, and an internal angle of friction of 30 deg. This corresponds to an active lateral pressure coefficient of 0.33, or an equivalent fluid pressure of 36.3 PCF. These values were used to analyze the panel for lateral moment cap city. The panels are reinforced with a 1” x 1” grid of 16 gauge, 60K psi wire, placed off-center to the panel thickness with plastic standouts when the forms are filled with 4000 PSI concrete mix. Analysis indicates this configuration has a factored moment capacity of 8857 in-lbs. The installed loading requires a maximum lateral bending moment of 744 in-lbs. Therefore it has a calculated factor of safety of 11.9. This is about eight times the min required. These panels are very durable, and should not ever become overloaded when installed and used according to the manufacturer’s recommendations.

If you have any questions or are in need of further assistance, please feel free to call.



Peter Chopelas PE



Regarding DURASKIRT's Compliance to Regulations Relating to Housing and Urban Development Code 3285.2 Manufacture Installation Instructions:

DURASKIRT's Compliance to Code 3285.2:

DURASKIRT™ concrete skirting is designed to exceed the requirements and intention of CODE 3285.2. Furthermore, DURASKIRT™ concrete skirting has been engineered and tested for backfilling and reviewed by two engineers, one in Washington State and one in Arizona. - SEE PAGES 22, 23 & 24 –

What DURASKIRT™ Is Not:

- 1) DURASKIRT™ is not a perimeter support foundation.
- 2) DURASKIRT™ is not a seismic or wind tie-down for the manufactured home.

What DURASKIRT™ Is:

DURASKIRT™ is a concrete, non-flammable, perimeter skirting wall system that is designed for backfilling meeting the requirements of HUD Compliance Code 3285.2 and handbook "Permanent Foundation Guild for Manufactured Housing" publication HUD-7584. Can be backfilled within 6" from the top.

Flood Areas:

Additionally, DURASKIRT™ used in flood plains must use our specially designed Flood-Vents allowing for waterflow through the panels meeting all flood venting requirements. Additionally, DURASKIRT™ panels can be used for a break-away panel design in severe or flash flood areas but will need further site-specific engineering. (We have a typical design available upon request).

Note: When installed to this installation manual, DURASKIRT™ will not damage the home although panels may need to be replaced.

Areas of Frost:

When using DURASKIRT™ above grade make sure that supporting soils are well draining below frost grades. The same must be for slabs where DURASKIRT™ is supported, i.e... below frost depth and or a drainage system that is below frost depth.

Installing DURASKIRT™ as a backfill skirting (pit-set), make sure panels are buried below the frost depth according to your local jurisdictions' requirements. This will prevent frost from heaving the panels and/or frost from breaching the home's perimeter.



**DURASKIRT PRO™, DURASKIRT PRO™, DURASHEDSKIRT & SDG™ 30 YEAR
UNCONDITIONAL MATERIAL REPLACEMENT WARRANTY
(NON-TRANSFERABLE)**

PURPOSE OF DURASKIRT PRO™, DURASHEDSKIRT & SDG™:

When installed correctly, it is skirting that is designed to give a home, business, or government building the appearance of a poured-in-place foundation. Additionally, DURASKIRT PRO™ or DURASHEDSKIRT™ is made for weather exposure, ground contact and ground burial.

DEFINITION OF DEFECT:

Because DURASKIRT PRO™, DURASHEDSKIRT & SDG™ is a hand-made concrete product, there may be some size and color variations which are not considered defects. Other variations such as hairline cracks that may be present or may show up in time are also not considered cause for replacement under the warranty, provided the product is still accomplishing its intended purpose.

WHAT IS COVERED UNDER 30 YEAR UNCONDITIONAL MATERIAL REPLACEMENT WARRANTY?

All DURASKIRT PRO™, DURASHEDSKIRT & SDG™ panels as originally installed for their first use. All DURASKIRT PRO™ joist fasteners that were used in conjunction with the skirting panels at their first use.

WHAT PURCHASER MUST DO:

For you to receive the replacement product/products you must supply photos, videos, and other documentation to prove the product has failed to perform its intended use to a Company Manager. You may be asked to send the product to the address provided below. Include your name and return street address. You will need to pay for the shipping costs.

WHAT WE WILL DO:

We will respond once we have reviewed the product and documentation. If we decide to replace the product, we will contact you to make shipping arrangements and replace DURASKIRT PRO™, DURASHEDSKIRT & SDG™ panels or DURASKIRT PRO™ joist fasteners with product of equal usefulness and/or value that is in production at the time that the product is being replaced. We reserve the right to substitute the product. We will also discount the product from the publicly advertised pricing on www.duraskirt.com at a rate of 25% off.

WHAT IS NOT COVERED:

- Damages to anything other than the warranted materials, related or unrelated to their use or improper use.
- Misuse, abuse, or improper care.
- Improper use of product.

THINGS THAT WILL VOID THE WARRANTY:

- Product that was not used as specified by DURASKIRT™ website, manual, written approval, or covering insulation in a vertical installation.
- Product that is discontinued.
- Improper installation.
- Natural disasters.
- Act of war or declaration of war by country in which product is in use.

DISCLAIMER:

In no event shall DURASKIRT, LLC be liable for general, incidental, or consequential damages including, without limitation, injury or damage to persons or property, arising out of any defect or packaging of the DURASKIRT PRO™, DURASHEDSKIRT™ & SDG™ products, or arising out of any breach of the warranty made herein. Some states do not allow limitations on how long an implied warranty will last or the exclusion or limitation of incidental or consequential damage, so the above limitations or exclusions may not apply to you since this warranty gives you specific legal rights and you may also have other rights which vary from State to State.

“Continued On the Next Page”



AGREEMENT:

For this warranty to be in effect, the owner must fill out and sign the form below and return the original copy to the address provided below. I have read and understand this document and agree to its terms.

Date of purchase _____ Invoice number _____

Homeowner printed name: _____

Homeowners signature: _____

Site address that the product is used:

House number: _____ City: _____

State: _____ Zip Code: _____

The warranty is activated after this form is filled out by the original homeowner and returned to the address below within 30 days of purchase. If a contractor is installing these products, it is their responsibility to submit this information to us and inform their client.

DURASKIRT, LLC
Attn: Consumer Service Dept.
12842 SR 9 | PO BOX 97
Mount Vernon, WA 98273
(360) 419-9909

DURASKIRT™ & SDG™ Made With PENETRON™

Our DURASKIRT™ high-strength concrete mixture just got better. The thickness of concrete does not matter if it is treated fully with PENETRON™. Therefore, we have exciting news. DURASKIRT™, DURASHEDSKIRT™ & SDG™ products all are made with PENETRON™ waterproofing additive. Permit me to say, “this is an enormous upgrade.”

The thickness of concrete does not matter if it is treated fully with PENETRON™. Although, PENETRON™ was developed primarily for commercial applications, we believe it makes our products more desirable. In fact, you will agree DURASKIRT™, DURASHEDSKIRT™ and SDG™ products are greatly improved by its advantages.

Why Buy Concrete Products Like DURASKIRT™, DURASHEDSKIRT™ & SDG™?



DURASKIRT™, DURASHEDSKIRT™ & SDG™ Made With PENETRON™

Because you’re looking to prolong the service life of your building or home. DURASKIRT™, DURASHEDSKIRT™ & SDG treated with PENETRON™ ADMIX-treated concrete eliminates further maintenance and repair costs, saving you money. Moreover, it will outlive untreated concrete by 60 years or more. So, What Are The PENETRON™ Advantages?

PENETRON™ is a crystalline technology that enhances the overall performance and lifespan of concrete. Indeed, its primary intention is to waterproof concrete. Even so, the benefits keep adding up:

- 1) Resists high hydrostatic pressure
- 2) Provides self-healing capabilities for cracks up to 0.5 mm
- 3) Enhances the compressive strength of concrete
- 4) Non-toxic and contains no VOCs (NSF 61-certified for potable water applications)
- 5) Resists chemical attacks (pH3–11)
- 6) Significantly reduces chloride penetration and carbonation
- 7) Effectively counters alkali silica reaction (ASR)
- 8) Prevents corrosion of reinforcement steel
- 9) Not a vapor barrier; allows concrete to breathe
- 10) Protects against sulfate attack
- 11) Exceeds requirements of ASTM C494-S (Specific Performance Admixtures)
- 12) Provides a fully waterproof and permanently dry concrete structure

Preventing Water Permeability

A key characteristic influencing concrete durability is permeability by water, carbon dioxide, chloride, sulfates and other potentially harmful substances. PENETRON™ ADMIX enhances concrete by increasing durability, reducing the ingress of harmful substances, and by improving many aspects of concrete performance by the following benefits:

More Notable Benefits:

- 1) Increases durability and lifespan of concrete by 60 years or more (the PENETRON™ ADMIX-treated concrete added up to 60 years or more to the service life of conventional concrete before the onset of corrosion)
- 2) Increases durability and lifespan of concrete by 60 years or more
- 3) Increases compressive strength by 13%
- 4) Concrete self-heals new cracks (PENETRON™ ADMIX is a hydrophilic product that reacts with moisture and concrete minerals to form crystals in cracks and voids. This gives concrete a permanent self-healing capability. Whenever new moisture enters, PENETRON™ ADMIX develops new crystal formations that seal newly formed micro-cracks).
- 5) Acid Resistance (When under acid attack, some projects face potential dissolution of the concrete matrix and a subsequent loss of structural integrity. PENETRON™ ADMIX offers protection against chemical attack (pH 3-11) and is the preferred and widely used solution for wastewater treatment plants).

- 6) In cold climates, freeze-thaw cycles are a major factor in the deterioration of exposed concrete structures (bridges, roads, etc.). Water inside the concrete
- 7) expands when it freezes, causing internal pressure; this leads to cracking, and the following thaw allows water to penetrate deeper into the newly formed cracks, then expanding again and causing further damage as the cycle repeats itself. Tests of PENETRON™ ADMIX-treated concrete show a 90% reduction in length changes due to freeze-thaw cycles
- 8) Increases compressive strength by 13%
- 9) Eliminates the need for any surface-applied protection systems
- 10) Corrosion resistant. Corrosion is an electrochemical process that occurs with a difference in electrical potential of steel and the surrounding cement matrix. Chloride-induced corrosion of steel is one of the most important aspects of concrete durability. Concrete dosed with PENETRON™ ADMIX ensures huge reductions in rapid chloride permeability test (RCPT) values (as per ASTM C-1202 and AASHTO T-277 tests) by reducing chloride ion permeability.
- 11) Saves money—a lifetime concrete product
- 12) “Green” product that contributes points to LEED projects
- 13) It provides self-healing of cracks (up to 0.5 mm) over the service life of product.
- 14) Improves permeability: While an optimal W/C ratio is crucial in achieving the desired overall concrete performance, permeability is crucial for concrete durability: decreased permeability means increased durability. PENETRON™ ADMIX reduces shrinkage cracking and seals micro-cracks. It provides self-healing of cracks (up to 0.5 mm) over the service life of the structure/product. Finally, our admixture provides a 70% or more permeability reduction as per ACI guidelines for PRAH (permeability-reducing admixtures for hydrostatic conditions).



NOTES: