



EVALUATION SUBJECT:
NO-BURN® PLUS, PLUS THB, PLUS XD, PLUS MIH, ORIGINAL, ORIGINAL MIH, WOOD GARD AND WOOD GARD MIH.

REPORT HOLDER:

No-Burn®, Inc.
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CSI Division: 09 00 00 FINISHES
CSI Section: 09 96 46 Intumescent Paints
CSI Section: 09 96 43 Fire-Retardant Coatings

1.0 SCOPE OF EVALUATION

1.1 Compliance to the following codes & regulations:

- 2015, 2012, 2009 and 2006 International Building Code® (IBC®)
- 2015, 2012, 2009 and 2006 International Residential Code® (IRC®)
- 2015, 2012, 2009 and 2006 International Existing Building Code® (IEBC®)

1.2 Evaluated in accordance with:

- IAPMO UES EC017, Evaluation Criteria for Field-Applied Fire Protective Coatings
- ICC-ES AC377, Acceptance Criteria for Spray-Applied Foam Plastic Insulation
- ICC-ES AC456 Acceptance Criteria for Fire-Protective Coatings Applied to Spray-Applied Foam Plastic Insulation Installed Without a Code-Prescribed Thermal Barrier

1.3 Properties assessed:

- Surface burning characteristics
- Interior finishes
- Thermal barrier and alternative thermal barrier
- Alternative ignition barrier
- Fire resistance

2.0 PRODUCT USE

No-Burn® coatings comply with the IBC®, IRC® and IEBC® for use in new and existing buildings. Applied to the substrates listed in [Tables 1](#) through [4](#) of this report, No-Burn® coatings provide the following attributes:

1. Surface burning characteristics and interior finish in accordance with Section 3.2 of this report.
2. Thermal barrier and alternative thermal barrier in accordance with Section 3.3 of this report.
3. Alternative ignition barrier in accordance with Section 3.4 of this report.
4. Fire resistance performance in accordance with Section 3.5 of this report.

3.0 PRODUCT DESCRIPTION

3.1 Product information

3.1.1 No-Burn® Original, No-Burn® Original Mih, No-Burn® Wood Gard and No-Burn® Wood Gard Mih are transparent, water-based liquids, packaged in 5-gallon (18.9 L) pails and 55-gallon (208 L) drums. The coatings have a shelf life of three years when stored in unopened containers between 40°F and 90°F (4.4°C and 32.2°C). No-Burn® Original, No-Burn® Original Mih, No-Burn® Wood Gard and No-Burn® Wood Gard Mih shall be mixed with a power mixing wand or equivalent at or between 500-900 RPM for a mixing time of 10 minutes per container.

3.1.2 No-Burn® Plus, No-Burn® Plus ThB, No-Burn® Plus XD, and No-Burn® Plus Mih are white, water-based latex liquids, which exhibit intumescent properties when exposed to elevated temperatures and flame. Packaging and storage details are as set forth in Section 3.1.1 of this report. No-Burn® Plus, No-Burn® Plus ThB, No-Burn® Plus XD, and No-Burn® Plus Mih shall be mixed with a power mixing wand or equivalent at or between 500-1500 RPM for a mixing time of 5 minutes per container.

3.2 Surface Burning Characteristics: As listed in [Table 1](#) of this report, No-Burn® Plus, No-Burn® Plus Mih, No-Burn® Original, No-Burn® Original Mih, No-Burn® Wood Gard and No-Burn® Wood Gard Mih provide Class A interior finish when applied to the specified substrates. When tested in accordance with ASTM E84 or UL 723, the listed coatings provide flame spread indices complying with ranges set forth for interior finishes in IBC® Section 803.1 of the 2015, 2012, 2009, and 2006 IBC®, Section R302.9 of the 2015, 2012 and 2009 IRC®, and Section R315.1 of the 2006 IRC®.

When No-Burn® Plus ThB is applied to spray-applied polyurethane foam insulation in accordance with [Table 2](#) of this report, the coated foam plastic assembly, which has been tested to NFPA 286, meets the acceptance criteria of IBC Section 803.1.2.1 meeting the requirements for Class A interior finish in accordance with Section 803.1 of the 2015, 2012 and 2009 IBC, Section 803.3 of the 2006 IBC, Section R302.9 of the 2015, 2012 and 2009 IRC, and Section R315.4 of the 2006 IRC and may be left exposed to the interior of the building.

3.3 Thermal Barrier and Alternative Thermal Barrier:

No-Burn® Plus ThB when applied to spray-applied polyurethane foam insulation listed in [Table 2](#) of this report may be installed without a prescriptive 15-minute thermal barrier in accordance with Section 2603.9 of the 2015 IBC®, Section 2603.10 of the 2012 IBC®, Section 2603.4 of the 2009 and 2006 IBC®, Section R316.6 for the 2015 and 2012 IRC®, Section R316.4 of the 2009 IRC® and Section R314.4 of the 2006 IRC®.

The product described in this Uniform Evaluation Service (UES) Report has been evaluated as an alternative material, design or method of construction in order to satisfy and comply with the intent of the provision of the code, as noted in this report, and for at least equivalence to that prescribed in the code in quality, strength, effectiveness, fire resistance, durability and safety, as applicable, in accordance with IBC Section 104.11. This document shall only be reproduced in its entirety.





As listed in [Table 2](#) of this report, No-Burn[®] Plus provides thermal barrier protection for walls and ceilings to Structural Insulated Panels (SIPs) with a maximum combined thickness of 12 ³/₈ inches (314 mm), consisting of a composite of nominal 11 ¹/₂ inches (292 mm) thick expanded polystyrene foam plastic core, (1.0 pcf [16 kg/m³], density) sandwiched between two ⁷/₁₆-inch-thick (11 mm) oriented strand board (OSB) sheets in accordance with Section 2603.9 of the 2015 IBC[®], Section 2603.10 of the 2012 IBC[®], Section 2603.4 of the 2009 and 2006 IBC[®] and Section R316.6 of the 2015 and 2012 IRC[®], Section R316.4 of the 2009 IRC[®] and R314.4 of the 2006 IRC[®].

3.4 Alternative Ignition Barrier: No-Burn[®] Plus and No-Burn[®] Plus XD when applied to the spray applied polyurethane foam insulations listed in [Table 3](#) of this report may be installed in an attic or crawl space without a prescriptive ignition barrier in accordance with Sections 2603.4.1.6 of the 2015, 2012, 2009 and 2006 IBC[®] and Sections R316.5.3 and R316.5.4 of the 2015, 2012, 2009 and 2006 IRC[®].

As listed in [Table 3](#) of this report, No-Burn[®] Plus XD and ZIP System[®] R-Sheathing may be installed in an attic or crawl space without a prescriptive ignition barrier. ZIP System[®] R-Sheathing (Insulating Sheathing), consists of ⁷/₁₆-inch-thick (11 mm) ZIP System[®] Wall Sheathing with a layer of maximum 1 inch thick (25.4 mm) rigid polyisocyanurate foam plastic board laminated to its interior face using PVA adhesive. The ZIP System[®] Wall Sheathing is OSB complying with U.S. DOC PS 2 for wood structural panels as Exposure 1 with a 24/0, 24/16, or Wall 24 span rating and is overlaid on the exterior side with a Grade D water-resistive barrier. The foam plastic insulation boards have a nominal density of 2.0 pcf (32 kg/m³), compressive strengths of 22 psi (152 kPa) and 20 psi (138 kPa), respectively, vapor permeance of less than perm, flame-spread indices of 75 or less and smoke-developed indices of 450 or less. The ZIP System[®] R-Sheathing panels are nominally 4 feet (1219 mm) wide by 8, 9, 10, 11 or 12 feet (2438, 2743, 3048, 3353, or 3658 mm) long and have square-finished-edge or machined-edge profile.

No-Burn[®] Plus and No-Burn[®] Plus XD may be installed in an attic or crawl space without a prescriptive ignition barrier when all of the following conditions are met:

- Entry to the attic or crawl space is only to repair, maintain, and service utilities and no storage is permitted.
- There are no interconnected attic or crawl space areas.
- Air in the attic or crawl space is not circulated to other parts of the building.
- Attic ventilation is provided when required by Section 1203.2 of the 2015, 2012, 2009 and 2006 IBC[®] or Section R806 of the 2015, 2012, 2009 and 2006 IRC[®], except when air impermeable insulation is permitted in unvented attics in accordance with Section R806.5 of the 2015 and 2012 IRC[®], Section R806.4 of the 2009 and 2006 IRC[®], Under-floor (crawl space) ventilation is provided, when required,

by Section 1203.4 of the 2015 IBC[®], Section 1203.3 of the 2012, 2009 and 2006 IBC[®] or Section R408.1 of the 2015, 2012, 2009 and 2006 IRC[®], as applicable.

- The foam plastic insulation is limited to the maximum thickness and density tested, shown in [Table 3](#) of this report.
- Combustion air is provided in accordance with Section 701 of the 2015, 2012 and 2009 IMC[®], or Section 701 and 703 of the 2006 IMC[®].

3.5 Fire Resistance: When tested in accordance with ASTM E119, Tests of a Floor assembly, No-Burn[®] Plus provides fire resistance to engineered wood framing members or components when applied to both sides of the web and top and bottom flanges and the interior facing side of the subfloor, once the components are installed, as an alternative to the 2-by-10 dimension lumber prescribed in Section R302.13, Exception 4 of the 2015 IRC[®] and Section R501.3, Exception 4 of the 2012 IRC[®]. At a minimum, the assembly shall be constructed with the framing members or components in accordance with [Table 4](#) of this report affixed to the rim board with 16d common or 10d box nails or fasteners in accordance with Table R602.3 (1) of the 2015 IRC or 8d nails or fasteners in accordance with the 2012, 2009 and 2006 IRC, 23/32" tongue and groove oriented strand board subfloor affixed with 8d common nails or fasteners in accordance with Table R602.3 (1).

4.0 DESIGN AND INSTALLATION

4.1 General: The coatings shall be field-applied to substrates in accordance with this report and the No-Burn[®], Inc. published instructions, by applicators qualified by No-Burn[®], Inc., for these tasks. Copies of this report and the No-Burn[®], Inc. instructions shall be available at the jobsite. Where conflicts occur, the more restrictive shall govern. Before and during coating application, substrate surfaces shall be dry, clean and free from loose debris, dirt, grease, oil and all prior coating materials such as paint, stains and sealers. The substrate shall not have, nor have been exposed to, treatments, chemicals, coatings, etc.

Visual observation of the applied coatings varies. Opaque coatings will result in a distinctive white color. Transparent coatings may result in a distinctive color dye on the substrate. For verification of the wet applied thickness, a standard painter's thickness gauge shall be used during the application. The finished dry mil thickness will be 0.40-0.70 times the wet mil thickness. When verification of transparent coatings is required by the code official, field testing shall be conducted as follows: flame from a propane-fueled torch shall be applied to the coated area and to a sample of uncoated substrate for a minimum of 10 seconds. The presence of the coating shall be observable through the comparison of the reactions of the coated and uncoated substrates to the flame.

The coatings shall be applied only to the specific substrates listed in [Tables 1](#) through [4](#) of this report. Immediately before



placing the coatings, the applicator shall verify the moisture content of the substrates, as applicable, in accordance with [Table 1](#), [Table 2](#) or [Table 4](#) of this report. Substrates shall be in their final position in the building, directly exposed to the interior, protected from the weather, in conditioned and unconditioned locations. Surface and ambient temperatures before and during application shall be 40°F (4.4°C) minimum. Surface temperatures shall not exceed 100°F (37.7°C) during application. Cure time is 24 hours minimum.

The coatings shall be applied at an application rate set forth in [Table 1](#), [Table 2](#), [Table 3](#) or [Table 4](#) of this report by spraying, roller or brush. The frequency of thickness measurements with a wet film thickness gauge during the application of each coat shall be at a minimum, measured once every 100 ft² (9.29 m²) of surface area.

4.2 Design: No-Burn[®] Plus, No-Burn[®] Plus ThB, No-Burn[®] Plus XD, No-Burn[®] Plus Mih, No-Burn[®] Original, No-Burn[®] Original Mih, No-Burn[®] Wood Gard and No-Burn[®] Wood Gard Mih shall be applied in one coat. No-Burn[®] Plus, after fully curing, may be overcoated by as many as seven coats of latex paint with a pH of 7 to 8 to the substrates listed in [Table 1](#) of this report.

5.0 LIMITATIONS

The No-Burn[®] coatings described in this report comply with, or are suitable alternatives to what is specified in, those codes listed in Section 1.0 of this report, subject to the following conditions:

5.1 The coatings shall be applied in accordance with this report, the manufacturer's instructions and the applicable code. In the event of a conflict between the manufacturer's instructions and this report, the more restrictive shall prevail.

5.2 Application is limited to the substrates listed in [Tables 1](#) through [4](#) of this report.

5.3 The coatings shall not be over-coated with any material, except for No-Burn[®] Plus, in accordance with Section 4.2, which may be over-coated by up to seven coats of latex paint with a pH of 7 to 8.

5.4 When coatings are applied in accordance with Section 3.5 of this report for Fire Resistance, the No-Burn[®] qualified applicator shall affix a No-Burn[®], Inc. issued label, shown in [Figure 1](#) of this report, to the substrate where the coating has been applied; at a minimum, one No-Burn[®], Inc. issued label shall be affixed every 10,000 feet² (929.03 m²) of floor area.

5.5 An installation certificate as shown in [Figure 2](#) of this report shall be completed by the applicator and submitted to the code official and No-Burn[®], Inc.

5.6 No-Burn[®] coatings shall be applied to areas within the weatherproofing membrane or surfaces not exposed to weather, where the substrate's in-service dry-use moisture content conditions are expected to be at or less than the

recommended levels in accordance with [Table 1](#), [Table 2](#) or [Table 4](#) of this report.

5.7 When coatings are applied in accordance with Section 3.5 of this report for Fire Resistance, the coatings shall be applied prior to installation of mechanical, electrical and plumbing components.

5.8 Other inspections may be required when determined to be necessary by the code official in accordance with Section R109.1.5 of the 2015, 2012, 2009 and 2006 IRC[®]. Special inspection shall be required when determined to be necessary by the code official in accordance with Section 1705.1.1 of the 2015 and 2012 IBC[®] or Section 1704.15 of the 2009 IBC[®] or 1704.13 of the 2006 IBC[®]. A statement of special inspection in accordance with Section 1704.2.3 of the 2015 and 2012 IBC[®] or 1705 of the 2009 or 2006 IBC[®] shall be submitted.

5.9 The coatings are manufactured in Sandusky, Ohio, under a quality control program with inspections by Intertek Testing Services NA Ltd. (AA-647).

6.0 SUBSTANTIATING DATA

Data in accordance with the IAPMO UES Evaluation Criteria for Field-Applied Fire Protective Coatings (EC017) adopted February 2014 (editorially revised March 2015).

Data in accordance with ICC-ES AC377 Acceptance Criteria for Spray-Applied Foam Plastic Insulation, dated April 2016, including test reports in accordance with Appendix X of AC377.

Data in accordance with ICC-ES AC456 Acceptance Criteria for Fire-Protective Coatings Applied to Spray-Applied Foam Plastic Insulation Installed Without a Code-Prescribed Thermal Barrier, dated October 2015.

Reports of fire tests conducted in accordance with ASTM E84, ASTM E119, NFPA 286, NFPA 286 (AC377, Appendix X), UL 723, and UL 1715.



7.0 IDENTIFICATION

Containers of the coatings are identified by a label affixed on product packaging. The label shall include the No Burn[®], Inc., name and address, product name, batch number, expiration date, application instructions, name or logo of the inspection agency (Intertek Testing Services NA Ltd.) and the IAPMO Uniform ES Mark of Conformity; and the Evaluation Report Number (ER-305) to identify the products recognized in this report. A die-stamp label may also substitute for the label. Either Mark of Conformity may be used as shown below:



or
IAPMO ER #305

Brian Gerber, P.E., S.E.
Vice President, Technical Operations
Uniform Evaluation Service

Richard Beck, PE, CBO, MCP
Vice President, Uniform Evaluation Service

GP Russ Chaney
CEO, The IAPMO Group

For additional information about this evaluation report please visit
www.uniform-es.org or email us at info@uniform-es.org



SUBSTRATE	MAX MOISTURE CONTENT	TABLE 1 - CLASS A INTERIOR FINISH					
		NO-BURN® PRODUCT NAME					
		Plus ²	Plus Mih	Original	Original Mih	Wood Gard	Wood Gard Mih
Douglas Fir	19%	6 mils wet (4 mils dry) 275 sq. ft. per gallon	6 mils wet (4 mils dry) 275 sq. ft. per gallon	5 mils wet (2 mils dry) 300 sq. ft. per gallon	NR	5 mils wet (3 mils dry) 300 sq. ft. per gallon	5 mils wet (3 mils dry) 300 sq. ft. per gallon
Red Oak	19%	6 mils wet (4 mils dry) 275 sq. ft. per gallon	NR	NR	NR	NR	NR
Oriented Strand Board	16%	8 mils wet (5 mils dry) 200 sq. ft. per gallon	NR	5 mils wet (2 mils dry) 300 sq. ft. per gallon	NR	NR	5 mils wet (3 mils dry) 300 sq. ft. per gallon
Southern Yellow Pine	19%	NR	NR	NR	5 mils wet (2 mils dry) 300 sq. ft. per gallon	NR	NR

¹NR = Not Recognized

²Coating may be overcoated with up to seven coats of latex paint

TABLE 2 – THERMAL BARRIER AND ALTERNATIVE THERMAL BARRIER						
SUBSTRATE	NO-BURN® PRODUCT NAME	MAXIMUM THICKNESS (in) Walls & Vertical Surfaces	MAXIMUM THICKNESS (in) Ceilings, Underside of Roof Sheathing/Rafters & Floors	APPLICATION OF NO-BURN® COATING	MAX MOISTURE CONTENT	
Icynene Classic Open Cell Spray Foam ¹	Plus ThB	6	7	18 mils wet (12 mils dry) 89 sq. ft. per gallon	N/A	
Icynene Classic Max Open Cell Spray Foam ¹	Plus ThB	6	7	18 mils wet (12 mils dry) 89 sq. ft. per gallon	N/A	
Icynene Classic Max Select Open Cell Spray Foam ¹	Plus ThB	6	7	18 mils wet (12 mils dry) 89 sq. ft. per gallon	N/A	
Structural Insulated Panel (SIPs)	Plus	N/A	N/A	12 mils wet (7 mils dry) 134 sq. ft. per gallon	16%	

For SI: 1 mil = 0.0254 mm, 1 inch = 25.4 mm, 1 pcf = 16.02 kg/m³

¹Use of No-Burn® Plus ThB for use with any insulation product listed herein is conditional upon that insulation product's compliance to AC377 in an evaluation report by an approved evaluation entity. Icynene Classic, Icynene Classic Max and Icynene Classic Max Select Open Cell Spray Foams are currently approved in ESR-1826. Users shall independently verify the current validity of any evaluation report referenced herein.


TABLE 3 - ALTERNATIVE IGNITION BARRIER							
SUBSTRATE	MAXIMUM THICKNESS (in) Wall Cavities & Attic Floors	MAXIMUM THICKNESS (in) Underside of Roof Sheathing/Rafters & Floors	NO-BURN® PRODUCT NAME	SUBSTRATE	MAXIMUM THICKNESS (in) Wall Cavities & Attic Floors	MAXIMUM THICKNESS (in) Underside of Roof Sheathing/Rafters & Floors	NO-BURN® PRODUCT NAME
			Plus XD				Plus
BASF ENERTITE® NM Open Cell Spray Foam	11 1/4	16	6 mils wet (4 mils dry) 267 sq. ft. per gallon	BASF ENERTITE® US Open Cell Spray Foam	11 1/4	11 1/4	12 mils wet (7 mils dry) 134 sq. ft. per gallon
BASF SPRAYTITE® 158 and 81205 Closed Cell Spray Foam	8	8	6 mils wet (4 mils dry) 267 sq. ft. per gallon	BASF SPRAYTITE® 178 and 81206 Closed Cell Spray Foam	9 1/4	11 1/4	12 mils wet (7 mils dry) 134 sq. ft. per gallon
BASF SPRAYTITE® SP Closed Cell Spray Foam	8	8	6 mils wet (4 mils dry) 267 sq. ft. per gallon	BASF WALLTITE® US Closed Cell Spray Foam	9 1/4	11 1/4	12 mils wet (7 mils dry) 134 sq. ft. per gallon
Accella Bayseal™ OC Open Cell Spray Foam	11 1/4	16	6 mils wet (4 mils dry) 267 sq. ft. per gallon	BASF WALLTITE® US-N Closed Cell Spray Foam	9 1/4	11 1/4	12 mils wet (7 mils dry) 134 sq. ft. per gallon
Convenience Touch 'n Seal® 2.0 PCF Closed Cell Spray Foam	2	2	8 mils wet (5 mils dry) 200 sq. ft. per gallon	BASF WALLTITE® HP+ Closed Cell Spray Foam	9 1/4	11 1/4	12 mils wet (7 mils dry) 134 sq. ft. per gallon
Demilec SEALECTION® 500 Open Cell Spray Foam	9 1/4	11 1/4	6 mils wet (4 mils dry) 267 sq. ft. per gallon	BASF COMFORT FOAM® 178 Closed Cell Spray Foam	9 1/4	11 1/4	12 mils wet (7 mils dry) 134 sq. ft. per gallon
Demilec SEALECTION Agribalance® Open Cell Spray Foam	9 1/2	11 1/2	10 mils wet (6 mils dry) 160 sq. ft. per gallon	Icynene MD-C-200 Closed Cell Spray Foam	11 1/4	11 1/4	16 mils wet (10 mils dry) 100 sq. ft. per gallon
ICP Handi-Foam® E-84 Class 1(A) Closed Cell Spray Foam	2	2	10 mils wet (6 mils dry) 160 sq. ft. per gallon				
Huber ZIP System® R-Sheathing Panel (R-3 & R-6)	N/A	N/A	10 mils wet (6 mils dry) 160 sq. ft. per gallon				
Icynene Classic (LD-C-50™) Open Cell Spray Foam	5 1/2	14	6 mils wet (4 mils dry) 267 sq. ft. per gallon				
Icynene Classic Max Open Cell Spray Foam	5 1/2	14	6 mils wet (4 mils dry) 267 sq. ft. per gallon				
Icynene Classic Max Select Open Cell Spray Foam	5 1/2	14	6 mils wet (4 mils dry) 267 sq. ft. per gallon				
Icynene Classic Plus (LD-C-70™) Open Cell Spray Foam	8	14	6 mils wet (4 mils dry) 267 sq. ft. per gallon				
Icynene ProSeal Eco (MD-R-200) Closed Cell Spray Foam	7 1/4	9 1/4	5 mils wet (3 mils dry) 320 sq. ft. per gallon				
Tiger Foam® E-84 Fire Rated SPF Class 1 Spray Foam	2	2	10 mils wet (6 mils dry) 160 sq. ft. per gallon				



TABLE 4 - FIRE RESISTANCE

SUBSTRATE	MAX MOISTURE CONTENT	MINIMUM DESIGN VALUES						NO-BURN® PRODUCT NAME
		Depth (in)	Web Thickness (in)	Flange Depth x Width (in)	Moment (ft-lbs)	EI x 10 ⁶ (in ² -lbs)	Vertical Shear (lbs)	Plus
I-joist: solid sawn flange	16%	9½	¾	1.5 x 2	2725	170	1475	15 milswet (9 milsdry) 107 sq. ft. per gallon
I-joist: structural composite lumber flange	16%	9½	¾	1.125 x 2	2725	170	1475	15 milswet (9 milsdry) 107 sq. ft. per gallon
I-joist: structural composite lumber flange	16%	11 7/8	¾	1.125 x 1.75	3025	260	1625	15 milswet (9 milsdry) 107 sq. ft. per gallon

NO-BURN® INSTALLATION LABEL




Product Name:

Certified Applicator Number:

X00000000NB0000

IAPMO UES ER 305



NO-BURN[®] INC.

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Figure 1



NO-BURN® PRODUCT APPLICATION CERTIFICATE

LOCATION OF BUILDING:

Address	Lot #	City	State	Zip
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DESCRIPTION AND USE OF BUILDING:

Certified Applicator Name	Company	Certified Applicator Number
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Describe Area Treated	Size of Area Treated (Surface Area SqFt)	Product Applied	Substrate (Noted in Tables 1, 2, 3 or 4)	Qty. (Application Rate)	Date Applied

Certified Applicator Signature

Date of Service

Figure 2