Listing and Technical Evaluation Report™

A Duly Authenticated Report from an Approved Agency

Report No: 2404-112

Issue Date: September 12, 2024

Revision Date: September 18, 2026

Subject to Renewal: October 1, 2027

Nu-Ceil™ Temporary Ceiling Containment System

Trade Secret Report Holder:

Nusens

Phone: 888-687-8720 Website: www.nusens-usa.com Email: customerservice@nusens-usa.com

CSI Designations:

DIVISION: 09 00 00 - FINISHES

Section: 09 50 00 - Ceilings

Section: 09 54 00 - Specialty Ceilings

1 Innovative Product Evaluated[1]

1.1 Nu-Ceil™ Temporary Ceiling Containment System

2 Product Description and Materials

2.1 The innovative product evaluated in this report is shown in **Figure 1**.



Figure 1. Nu-Ceil™ Temporary Ceiling Containment System

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2.2 The Nu-Ceil™ Temporary Ceiling Containment System is a temporary suspended ceiling used as a dirt, dust, and debris containment system when a facility is undergoing a reroofing or other construction projects.

2.2.1 Nu-Ceil™ Temporary Ceiling Containment System is a proprietary and patent-pending polyethylene-based film with fire-retardant and Biosustainable™ properties[2] extruded into a film, then cut to size in line, and packaged.

2.2.2 Nu-Ceil™ Temporary Ceiling Containment System film will not block the activation of NFPA 13 fire suppression sprinklers above the temporary Nu-Ceil™ Temporary Ceiling Containment System installation, as the film will melt out prior to the activation time of standard NFPA 13 approved sprinkler heads.

2.3 Physical properties of Nu-Ceil™ Temporary Ceiling Containment System are specified in **Table 1**.

Table 1. Nu-Ceil™ Temporary Ceiling Containment System Product Specifications

Property		Nominal
Thickness	[mil]	3
Density	oz/yd^2 [g/m^2]	2.12 [72]
Tensile Strength: Machine	psi [MPa]	2100 [14.5]
Tensile Strength: Transverse	psi [MPa]	2250 [15.5]
Light Transmittance	[%]	78
Melt Index	(190°C/2.16 kg)	2.0g/10min
Peak Melting Temperature	°F [°C]	255 [124]
Thermomechanical Analysis (TMA) Inflection Temperature (ASTM E831)	°F [°C]	154 [68]
SI: 1 in = 25.4 mm, 1 lb = 4.45 N, 1 lb/ft = 0.0146 kN/m, 1-psf = 0.0479 kN/m^2, 1-psi = 0.00689 MPa, 1 mph = 1.61 km/h, 1 F·ft^2·h/BTU = 0.1761 K·m^2/W		

2.4 As needed, review material properties for design in **Section 6** and the regulatory evaluation in **Section 8**.

3 Definitions[3]

3.1 New Materials[4] are defined as building materials, equipment, appliances, systems, or methods of construction, not provided for by prescriptive and/or legislatively adopted regulations, known as alternative materials.[5] The design strength and permissible stresses shall be established by tests[6] and/or engineering analysis.[7]

3.2 Duly authenticated reports[8] and research reports[9] are test reports and related engineering evaluations that are written by an approved agency[10] and/or an approved source.[11]

3.2.1 This report utilizes intellectual property and/or trade secrets to create public domain material properties for commercial end-use.

3.2.1.1 This report protects confidential Intellectual Property and trade secrets under the regulation, 18.US.Code.90, also known as Defend Trade Secrets Act of 2016 (DTSA).[12]

3.3 An approved agency is *"approved"* when it is ANAB ISO/IEC 17065 accredited. DrJ Engineering, LLC (DrJ) is accredited and listed in the ANAB directory.

3.4 An approved source is *"approved"* when a professional engineer (i.e., Registered Design Professional, hereinafter RDP) is properly licensed to transact engineering commerce. The regulatory authority governing approved sources is the state legislature via its professional engineering regulations.[13]

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3.5 Testing and/or inspections conducted for this duly authenticated report were performed by an ISO/IEC 17025 accredited testing laboratory, an ISO/IEC 17020 accredited inspection body, and/or a licensed RDP.

3.5.1 The Center for Building Innovation (CBI) is ANAB[14] ISO/IEC 17025 and ISO/IEC 17020 accredited.

3.6 The regulatory authority shall enforce[15] the specific provisions of each legislatively adopted regulation. If there is a non-conformance, the specific regulatory section and language of the non-conformance shall be provided in writing[16] stating the nonconformance and the path to its cure.

3.7 The regulatory authority shall accept duly authenticated reports from an approved agency and/or an approved source with respect to the quality and manner of use of new materials or assemblies as provided for in regulations regarding the use of alternative materials, designs, or methods of construction.[17]

3.8 ANAB is an International Accreditation Forum (IAF) Multilateral Recognition Arrangement (MLA) signatory. Therefore, recognition of certificates and validation statements issued by conformity assessment bodies accredited by all other signatories of the IAF MLA with the appropriate scope shall be approved.[18] Thus, all ANAB ISO/IEC 17065 duly authenticated reports are approval equivalent,[19] and can be used in any country that is an MLA signatory found at this link: https://iaf.nu/en/recognised-abs/

3.9 Approval equity is a fundamental commercial and legal principle.[20]

4 Applicable Local, State, and Federal Approvals; Standards; Regulations[21]

4.1 *Local, State, and Federal*

4.1.1 Approved in all local jurisdictions pursuant to ISO/IEC 17065 duly authenticated report use, which includes, but is not limited to, the following featured local jurisdictions: Austin, Baltimore, Broward County, Chicago, Clark County, Dade County, Dallas, Detroit, Denver, DuPage County, Fort Worth, Houston, Kansas City, King County, Knoxville, Las Vegas, Los Angeles City, Los Angeles County, Miami, Nashville, New York City, Omaha, Philadelphia, Phoenix, Portland, San Antonio, San Diego, San Jose, San Francisco, Seattle, Sioux Falls, South Holland, St. Louis County, Texas Department of Insurance, and Wichita.[22]

4.1.2 Approved in all state jurisdictions pursuant to ISO/IEC 17065 duly authenticated report use, which includes, but is not limited to, the following featured states: California, Florida, New Jersey, Oregon, New York, Texas, Washington, and Wisconsin.[23]

4.1.3 Approved by the Code of Federal Regulations Manufactured Home Construction: Pursuant to Title 24, Subtitle B, Chapter XX, Part 3282.14[24] and Part 3280[25] pursuant to the use of ISO/IEC 17065 duly authenticated reports.

4.1.4 Approved means complying with the requirements of local, state, or federal legislation.

4.2 *Regulations*

4.2.1 *IBC – 18, 21, 24: International Building Code®*

4.2.2 *IRC – 18, 21, 24: International Residential Code®*

4.2.3 *IECC – 18, 21, 24: International Energy Conservation Code®*

4.2.4 *IFC – 18, 21, 24: International Fire Code®*

4.3 *Standards*

4.3.1 *ASTM D3418: Standard Test for Transition Temperatures and Enthalpies of Fusion and Crystallization of Polymers by Differential Scanning Calorimetry*

4.3.2 *ASTM E84: Standard Test Method for Surface Burning Characteristics of Building Materials*

4.3.3 *ASTM E119: Standard Test Methods for Fire Tests of Building Construction and Materials*

4.3.4 *ASTM E831: Standard Test Method for Linear Thermal Expansion of Solid Materials by Thermomechanical Analysis*

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4.3.5 *NFPA 13: Standard for the Installation of Sprinkler Systems*

4.3.6 *NFPA 701: Standard Methods of Fire Tests for Flame Propagation of Textiles and Films*

4.3.7 *UL 723: Test for Surface Burning Characteristics of Building Materials*

5 Listed[26]

5.1 Equipment, materials, products, or services included in a List published by a nationally recognized testing laboratory (e.g., CBI), an approved agency (e.g., CBI and DrJ), and/or an approved source (e.g., DrJ), or other organization(s) concerned with product evaluation (e.g., DrJ), that maintains periodic inspection (e.g., CBI) of production of listed equipment or materials, and whose listing states either that the equipment or material meets nationally recognized standards or has been tested and found suitable for use in a specified manner.

6 Tabulated Properties Generated from Nationally Recognized Standards

6.1 *Surface Burning Performance*

6.1.1 Nu-Ceil™ Temporary Ceiling Containment System was evaluated for its surface burning characteristics in accordance with ASTM E84/UL 723, tested by Southwest Research Institute (SwRI) under project numbers 01.27684.02.045a and 01.27684.02.045b (Material IDs Nu-Ceil 1.08-0.05 and Nu-Ceil 1.08-0.10; test date September 6, 2023; report date October 13, 2023; technical specialist Marina A. Gonzalez; approved by Matthew S. Blais, Ph.D., Director, Material Flammability Section, Fire Technology Department).

6.1.1.1 Nu-Ceil™ Temporary Ceiling Containment System has a Class A rating, as provided in **Table 2**.

Table 2. Surface Burning Characteristics[1]

Product	Flame Spread Index	Smoke Developed Index	Classification
Nu-Ceil™ Temporary Ceiling Containment System	15	60	Class A
Standard Regulation Requirements	< 25	< 450	

1. When tested in accordance with ASTM E84/UL 723.

6.1.2 Nu-Ceil™ Temporary Ceiling Containment System was evaluated for flame propagation in accordance with NFPA 701, Method 1, as tested by SwRI under project numbers 01.27687.01.334a and 01.27687.01.334b (Material IDs Nu-Ceil 1.08-0.05 and Nu-Ceil 1.08-0.10; test date September 7, 2023; report date October 13, 2023; technical specialist Marina A. Gonzalez; approved by Matthew S. Blais, Ph.D.) as provided in **Table 3**.

Table 3. NFPA 701 Flame Propagation of Film Characteristics of Nu-Ceil™ Temporary Ceiling Containment System

Product	Mass Loss %	Standard Deviation	Burning on Floor(s)
Nu-Ceil™ Temporary Ceiling Containment System	1.32%	≤ 3	None
Standard Regulation Requirements	≤ 40%	<3	≤ 2 s

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6.2 *NFPA 13 Sprinkler Activation*

6.2.1 Nu-Ceil™ Temporary Ceiling Containment System was tested to determine the Thermomechanical Analysis (TMA)[27] inflection temperature and melting temperatures as shown in **Table 4**.

6.2.1.1 The TMA inflection temperature is the temperature at which the film would start to lose mechanical properties, collapse, and break away from the ceiling, allowing the sprinklers to run unimpeded.

Table 4. Melting/TMA Inflection Temperatures used for Breakaway Characteristics of Nu-Ceil™ Temporary Ceiling Containment System

Product	TMA Inflection Temp (°F)	Peak Melting Temp (°F)	Sprinkler Head Activation Range (°F)[2]
Nu-Ceil™ Temporary Ceiling Containment System	154 (68° C)	255 (124° C)	175-225 (79° - 107° C)[1]

1. Based on the NFPA website as shown here: www.nfpa.org/news-blogs-and-articles/blogs/2021/06/22/the-basics-of-sprinkler-thermal-characteristics.
2. Ordinary-temperature sprinkler heads have nominal activation ratings in the 135º to 170º Fahrenheit range. The Nu-Ceil™ system TMA Inflection Temperature (Element New Berlin Report No. ENB036348P, per ASTM E831) of approximately 154º Fahrenheit (67.7º Celsius) is within the nominal rating range of ordinary-temperature sprinklers. The operative comparison, however, is not the static nominal rating; it is the dynamic thermal response in a fire event. Based on the ASTM E119 time-temperature curve referenced in Section 6.2.2, the ceiling temperature exceeds 260 degrees Fahrenheit within 60 seconds of fire onset. The mid-scale test reported in Section 6.2.3 confirms the Nu-Ceil™ film melts and falls away within 50 seconds of fire exposure, which is faster than the thermal response and activation cycle of either ordinary-temperature or intermediate-temperature NFPA 13 sprinkler heads.

6.2.2 Based on the time-temperature curve of ASTM E119, the temperature of the ceiling is expected to reach above 260° F (127° C) before 60 seconds in a fire event. Therefore, the Nu-Ceil™ Temporary Ceiling Containment System will have melted away, prior to the time delay and initiation of a standard sprinkler activation, as is corroborated by the ASTM E119 time-temperature curve testing conducted, in addition to the Nu-Ceil™ Temporary Ceiling Containment System melting temperature.

6.2.3 A mid-scale test was conducted on the Nu-Ceil™ Temporary Ceiling Containment System to determine how quickly the it will melt away in a fire event. It was found that within the first 50 seconds of testing the Nu-Ceil™ Temporary Ceiling Containment System had already melted away.

6.3 Alternative techniques shall be permitted in accordance with accepted engineering practice and experience. These provisions for the use of alternative materials, designs, and methods of construction are not intended to prevent the installation of any material or to prohibit any design or method of construction not specifically prescribed herein. This includes, but is not limited to, the following areas of engineering: mechanics of materials, structures, building science, and fire science.

7 Certified Performance[28]

7.1 The Nu-Ceil™ Temporary Ceiling Containment System will not impede the activation, nor the water distribution response, or performance of standard NFPA 13 installed sprinklers.

7.1.1 The Nu-Ceil™ Temporary Ceiling Containment System has been shown through testing to melt/soften and break/fall away, prior to the activation temperature level needed for activation and subsequent response time of NFPA 13 sprinklers.

7.1.2 The Nu-Ceil™ Temporary Ceiling Containment System has been shown through testing to not spread flame in a manner that would add to the conflagration.

7.2 The Nu-Ceil™ Temporary Ceiling Containment System is a temporary dust and debris containment system and thus, does not need to comply with regulatory requirements specific to dropout ceiling systems. The Nu-Ceil™ Temporary Ceiling Containment System's primary purpose is to capture any dust or debris that may find its way into a building from the ceiling due to a reroofing project. This system is installed before the reroofing project and removed after the new roof is installed.

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7.3 All construction methods shall conform to accepted engineering practices to ensure durable, livable, and safe construction and shall demonstrate acceptable workmanship reflecting journeyman quality of work of the various trades.[29]

7.4 The strength and rigidity of the component parts and/or the integrated structure shall be determined by engineering analysis or by suitable load tests to simulate the actual loads and conditions of application that occur.[30]

8 Regulatory Evaluation and Accepted Engineering Practice

8.1 The Nu-Ceil™ Temporary Ceiling Containment System complies with the following legislatively adopted regulations and/or accepted engineering practice for the following reasons:

8.1.1 Fire performance (flame spread and smoke developed indices) as specified in IBC Section 803.1.2 and IRC Section R302.9.

8.1.1.1 Beyond the regulatory requirements as stated in **Section 8.1.1**, there are no additional requirements that exist for ceiling dust and debris containment systems.

8.2 The Nu-Ceil™ Temporary Ceiling Containment System shall be approved because it complies with all pertinent regulatory requirements that exist for ceiling dust and debris containment systems.

8.2.1 Commercial sprinkler systems, designed pursuant to NFPA 13, will perform as expected by the NFPA 13 standards and sprinkler fuse activation temperatures.

8.3 As all adopted regulations state, where the alternative material, design, or method of construction, such as this ceiling dust and debris containment system, is not approved, the building official shall respond in writing, stating the reasons why the alternative was not approved and the specific regulations that have not been complied with so that a remedy can be provided.

8.4 Any building code, regulation and/or accepted engineering evaluations (e.g., research reports, duly authenticated reports, etc.) that are conducted for this Listing were performed by DrJ, which is an ISO/IEC 17065 accredited certification body and a professional engineering company operated by RDP or approved sources. DrJ is qualified[31] to practice product and regulatory compliance services within its scope of accreditation and engineering expertise,[32] respectively.

8.5 Engineering evaluations are conducted with DrJ's ANAB accredited ICS code scope of expertise, which is also its areas of professional engineering competence.

9 Installation

9.1 Installation shall comply with the approved construction documents, the manufacturer installation instructions, this report, and the applicable building code.

9.2 In the event of a conflict between the manufacturer installation instructions and this report, contact the manufacturer for counsel on the proper installation method.

10 Substantiating Data

10.1 Testing has been performed under the supervision of a professional engineer and/or under the requirements of ISO/IEC 17025 as follows:

10.1.1 Surface burning characteristics testing in accordance with ASTM E84/UL 723 (SwRI Project Numbers 01.27684.02.045a and 01.27684.02.045b, report date October 13, 2023)

10.1.2 Flame propagation testing in accordance with NFPA 701, Method 1 (SwRI Project Numbers 01.27687.01.334a and 01.27687.01.334b, report date October 13, 2023)

10.1.3 Melting and TMA inflection temperatures tested for thermomechanical analysis of properties.

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10.1.4 Using Nusens proprietary technology and intellectual property, the June 25, 2019 Intertek report number 103944269COQ-001, stated that reaction of film to standard fire event with time-temperature curve in accordance with ASTM E119/CAN/ULC S101, was as follows:

SECTION 5

TEST OBSERVATIONS

Time	Observations
0:00	Start of Test.
0:10	LDPE Film melted away.
2:00	Gypsum discoloured.
6:00	End of test.

10.1.5 On November 10, 2022, MXL Engineering & Associates, Inc. provided the following test and engineering report using Nusens proprietary technology and intellectual property, identified as MXL Project No. 104-22-2220, signed and sealed by Bruno Lopes, P. Eng, the engineer of record (referencing underlying MXL Evaluation Report #18-030 dated April 27, 2018):

Conclusion

Based on the time-temperature curve of CAN/ULC S101 the ceiling temperature will be estimated to be 260°F (127°C) within the first 60 seconds of a fire event, and the LDPE plastic sheeting that is draped under the joist system will be the first point of contact as with the rising heat from a fire event. The LDPE plastic sheeting, with a melt temperature of 225°F (107.2°C), will melt and dissipate within the acceptable time range for an Ordinary sprinkler head activation.

Therefore, we can conclude that;

1. The LDPE plastic sheeting is permissible to be installed in a noncombustible construction based on OBC Section 3.1.5.1 (2) (a).
2. The LDPE plastic sheeting will melt prior to the activation time of the sprinkler head being attained.
3. The LDPE will not impede the sprinkler activation when the sprinkler is designed in accordance with NFPA 13.
4. The temporary installation of LDPE Plastic Sheeting by Nusens to protect internal contents during re-roofing activities is an acceptable practice.

10.1.6 Nusens holds a UL Solutions Classification under CCN BVDV (Sheathing Materials), UL file number R41250, evaluating the Nu-Ceil™ film under ASTM E84/UL 723. The surface-burning data referenced in **Section 6.1**, **Table 2**, is drawn from this UL R41250 Classification.

10.1.7 On July 12, 2024, Element New Berlin conducted Differential Scanning Calorimetry (DSC) testing under Report No. ENB036292P and provided the following test reports using Nusens proprietary technology and intellectual property:

element

Element Materials Technology
3200 S 166th Street
New Berlin, WI
53151-4141 USA

P 262 782 6344
F 262 782 3653
T 800 726 6385
info.newberlin@element.com
element.com

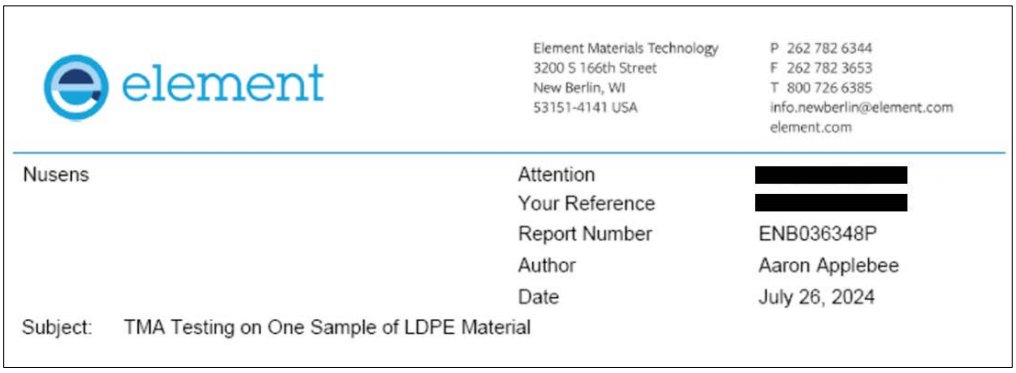
Nusens

Attention	[redacted]
Your Reference	[redacted]
Report Number	ENB036292P
Author	Aaron Applebee
Date	July 12, 2024

Subject: DSC Testing for One (1) Plastic LDPE Sheet Sample

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10.1.8 On July 26, 2024, Element New Berlin conducted TMA testing under Report No. ENB036348P (tested per ASTM E831 with 0.5 N loaded film/fiber expansion probe) and provided the following test reports using Nusens proprietary technology and intellectual property:



element

Element Materials Technology
3200 S 166th Street
New Berlin, WI
53151-4141 USA

P 262 782 6344
F 262 782 3653
T 800 726 6385
info.newberlin@element.com
element.com

Nusens

Attention	[redacted]
Your Reference	[redacted]
Report Number	ENB036348P
Author	Aaron Applebee
Date	July 26, 2024

Subject: TMA Testing on One Sample of LDPE Material

10.2 The test reports cited above were commissioned by, and are the property of, Nusens as the Trade Secret Report Holder. DrJ Engineering, LLC, as an ANAB ISO/IEC 17065 accredited product certification body, has reviewed the underlying test reports and confirms that the data is accurate and was generated in accordance with the cited test standards by ISO/IEC 17025 accredited laboratories. These reports are cited herein as published references in support of this report.

10.3 Information contained herein may include the result of testing and/or data analysis by sources that are approved agencies, approved sources, and/or an RDP. Accuracy of external test data and resulting analysis is relied upon.

10.4 Where applicable, testing and/or engineering analysis are based upon provisions that have been codified into law through state or local adoption of regulations and standards. The developers of these regulations and standards are responsible for the reliability of published content. DrJ's engineering practice may use a regulation-adopted provision as the control. A regulation-endorsed control versus a simulation of the conditions of application to occur establishes a new material as being equivalent to the regulatory provision in terms of quality, strength, effectiveness, fire resistance, durability, and safety.

10.5 The accuracy of the provisions provided herein may be reliant upon the published properties of raw materials, which are defined by the grade mark, grade stamp, mill certificate, or duly authenticated reports from approved agencies and/or approved sources provided by the supplier. These are presumed to be minimum properties and relied upon to be accurate. The reliability of DrJ's engineering practice, as contained in this duly authenticated report, may be dependent upon published design properties by others.

10.6 *Testing and Engineering Analysis*

10.6.1 The strength, rigidity, and/or general performance of component parts and/or the integrated structure are determined by suitable tests that simulate the actual conditions of application that occur and/or by accepted engineering practice and experience.[33]

10.7 Where additional condition of use and/or regulatory compliance information is required, please search for Nu-Ceil™ Temporary Ceiling Containment System on the DrJ Certification website.

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11 Findings

11.1 As outlined in **Section 6**, Nu-Ceil™ Temporary Ceiling Containment System has performance characteristics that were tested and/or meet applicable regulations. In addition, they are suitable for use pursuant to its specified purpose.

11.2 When used and installed in accordance with this duly authenticated report and the manufacturer installation instructions, Nu-Ceil™ Temporary Ceiling Containment System shall be approved for the following applications:

11.2.1 Use as a temporary physical barrier/structure to mitigate dirt, dust, and debris when separating an area below the containment system from a construction project located above the barrier.

11.3 Nu-Ceil™ Temporary Ceiling Containment System will not impede the activation, nor the water distribution response of standard NFPA 13 installed sprinklers.

11.3.1 The Nu-Ceil™ Temporary Ceiling Containment System has been shown through testing, to melt/soften and break and fall away, prior to the activation temperature level needed for activation and subsequent response time of NFPA 13 sprinklers.

11.3.2 The Nu-Ceil™ Temporary Ceiling Containment System has been shown through testing to not spread flame in a manner that would add to the conflagration.

11.4 The Nu-Ceil™ Temporary Ceiling Containment System shall be approved because it complies with all pertinent regulatory requirements that exist for ceiling dust and debris containment systems.

11.4.1 Commercial sprinkler systems designed pursuant to NFPA 13 will perform as expected by the NFPA 13 standards and sprinkler fuse activation temperatures.

11.5 As all adopted regulations state, where the alternative material, design, or method of construction, such as this ceiling dust and debris containment systems, is not approved, the building official shall respond in writing, stating the reasons why the alternative was not approved and the specific regulations that have not been complied with so that a remedy can be provided.

11.6 Any application specific issues not addressed herein can be engineered by an RDP. Assistance with engineering is available from Nusens.

11.7 IBC Section 104.2.3[34] (IRC Section R104.2.2[35] and IFC Section 104.2.3[36] are similar) in pertinent part state:

> 104.2.3 Alternative Materials, Design and Methods of Construction and Equipment. The provisions of this code are not intended to prevent the installation of any material or to prohibit any design or method of construction not specifically prescribed by this code, provided that any such alternative is not specifically prohibited by this code and has been approved.

11.8 **Approved:**[37] Building regulations require that the building official shall accept duly authenticated reports.[38]

11.8.1 An approved agency is *"approved"* when it is ANAB ISO/IEC 17065 accredited.

11.8.2 An approved source is *"approved"* when an RDP is properly licensed to transact engineering commerce.

11.8.3 Federal law, Title 18 US Code Section 242, requires that, where the alternative product, material, service, design, assembly, and/or method of construction is not approved, the building official shall respond in writing, stating the reasons why the alternative was not approved. Denial without written reason deprives a protected right to free and fair competition in the marketplace.

11.9 DrJ is a licensed engineering company, employs licensed RDPs and is an ANAB Accredited Product Certification Body – Accreditation #1131.

11.10 Through the IAF Multilateral Arrangement (MLA), this duly authenticated report can be used to obtain product approval in any jurisdiction or country because all ANAB ISO/IEC 17065 duly authenticated reports are equivalent.[39]

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12 Conditions of Use

12.1 As defined in **Section 6**, where material and/or engineering mechanics properties are created for load resisting design purposes, the resistance to the applied load shall not exceed the ability of the defined properties to resist those loads using the principles of accepted engineering practice.

12.2 As listed herein, Nu-Ceil™ Temporary Ceiling Containment System shall be used for interior, non-structural applications only.

12.2.1 Nu-Ceil™ Temporary Ceiling Containment System shall not be considered a structure or classified as a dropout or open-grid panel system.

12.3 When required by adopted legislation and enforced by the building official, also known as the Authority Having Jurisdiction (AHJ) in which the project is to be constructed:

12.3.1 Any calculations incorporated into the construction documents shall conform to accepted engineering practice and, when prepared by an approved source, shall be approved when signed and sealed.

12.3.2 This report and the installation instructions shall be submitted at the time of permit application.

12.3.3 At a minimum, this innovative product shall be installed per **Section 9**.

12.3.4 The review of this report by the AHJ shall comply with IBC Section 104.2.3.2 and IBC Section 105.3.1.

12.3.5 This innovative product has an internal quality control program and a third party quality assurance program in accordance with IBC Section 104.7.2, IBC Section 110.4, IBC Section 1703, IRC Section R104.7.2, and IRC Section R109.2.

12.3.6 The application of this innovative product in the context of this report is dependent upon the accuracy of the construction documents, implementation of installation instructions, inspection as required by IBC Section 110.3, IRC Section R109.2, and any other regulatory requirements that may apply.

12.4 The approval of this report by the AHJ shall comply with IBC Section 1707.1, where legislation states in part, *"the building official shall make, or cause to be made, the necessary tests and investigations; or the building official shall accept duly authenticated reports from approved agencies in respect to the quality and manner of use of new materials or assemblies as provided for in Section 104.2.3"*, all of IBC Section 104, and IBC Section 105.3.

12.5 Design loads shall be determined in accordance with the regulations adopted by the jurisdiction in which the project is to be constructed and/or by the building designer (i.e., owner or RDP).

12.6 The actual design, suitability, and use of this report for any particular building, is the responsibility of the owner or the authorized agent of the owner.

13 Identification

13.1 Nu-Ceil™ Temporary Ceiling Containment System, as listed in **Section 1.1**, is identified by a label on the board or packaging material bearing the manufacturer name, product name, this report number, and other information to confirm code compliance.

13.2 Additional technical information can be found at www.nusens-usa.com/ceiling-containment-system.

14 Review Schedule

14.1 This report is subject to periodic review and revision. For the latest version, visit www.drjcertification.org.

14.2 For information on the status of this report, please contact DrJ Certification.

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Notes

1 For more information, visit drjcertification.org or call us at 608-310-6748.

2 Biosustainable (or biochemically sustainable) describes practices, materials, and economies that rely on renewable, organic, and biodegradable resources without depleting the environment.

3 Capitalized terms and responsibilities are defined pursuant to the applicable building code, applicable reference standards, the latest edition of TPI 1, the NDS, AISI S202, US professional engineering law, Canadian building code, Canada professional engineering law, Qualtim External Appendix A: Definitions/Commentary, Qualtim External Appendix B: Project/Deliverables, Qualtim External Appendix C: Intellectual Property and Trade Secrets, definitions created within Design Drawings and/or definitions within Reference Sheets. Beyond this, terms not defined shall have ordinarily accepted meanings as the context implies. Words used in the present tense include the future; words stated in the masculine gender include the feminine and neuter; the singular number includes the plural and the plural, the singular.

4 https://up.codes/viewer/mississippi/ibc-2024/chapter/17/special-inspections-and-tests#1702

5 Alternative Materials, Design and Methods of Construction and Equipment: The provisions of any regulation code are not intended to prevent the installation of any material or to prohibit any design or method of construction not specifically prescribed by a regulation. Please review https://www.justice.gov/atr/mission and https://up.codes/viewer/mississippi/ibc-2024/chapter/1/scope-and-administration#104.2.3

6 https://up.codes/viewer/mississippi/ibc-2024/chapter/17/special-inspections-and-tests#1706.2:~:text=the%20design%20strengths%20and%20permissible%20stresses%20shall%20be%20established%20by%20tests

7 The design strengths and permissible stresses of any structural material shall conform to the specifications and methods of design of accepted engineering practice. https://up.codes/viewer/mississippi/ibc-2024/chapter/17/special-inspections-and-tests#1706.1:~:text=Conformance%20to%20Standards-,The%20design%20strengths%20and%20permissible%20stresses,-of%20any%20structural

8 https://up.codes/viewer/mississippi/ibc-2024/chapter/17/special-inspections-and-tests#1707.1:~:text=the%20building%20official%20shall%20make%2C%20or%20cause%20to%20be%20made%2C%20the%20necessary%20tests%20and%20investigations%3B%20or%20the%20building%20official%20shall%20accept%20duly%20authenticated%20reports%20from%20approved%20agencies%20in%20respect%20to%20the%20quality%20and%20manner%20of%20use%20of%20new%20materials%20or%20assemblies%20as%20provided%20for%20in%20Section%20104.2.3.

9 https://up.codes/viewer/mississippi/ibc-2024/chapter/17/special-inspections-and-tests#1703.4.2

10 https://up.codes/viewer/mississippi/ibc-2024/chapter/2/definitions#approved_agency

11 https://up.codes/viewer/mississippi/ibc-2024/chapter/2/definitions#approved_source

12 https://www.law.cornell.edu/uscode/text/18/1832 (b) Any organization that commits any offense described in subsection (a) shall be fined not more than the greater of $5,000,000 or 3 times the value of the stolen trade secret to the organization, including expenses for research and design and other costs of reproducing the trade secret that the organization has thereby avoided. The federal government and each state have a public records act. To follow DTSA and comply state public records and trade secret legislation requires approval through ANAB ISO/IEC 17065 accredited certification bodies or approved sources. For more information, please review this website: Intellectual Property and Trade Secrets.

13 https://www.nspe.org/resources/issues-and-advocacy/professional-policies-and-position-statements/regulation-professional AND https://apassociation.org/list-of-engineering-boards-in-each-state-archive/

14 https://www.cbitest.com/accreditation/

15 https://up.codes/viewer/mississippi/ibc-2024/chapter/1/scope-and-administration#104.1:~:text=directed%20to%20enforce%20the%20provisions%20of%20this%20code

16 https://up.codes/viewer/mississippi/ibc-2024/chapter/1/scope-and-administration#104.2.3 AND https://up.codes/viewer/mississippi/ibc-2024/chapter/1/scope-and-administration#105.3.1

17 https://up.codes/viewer/mississippi/ibc-2024/chapter/17/special-inspections-and-tests#1707.1

18 https://iaf.nu/en/about-iaf-mla/#:~:text=Once%20an%20accreditation%20body%20is%20a%20signatory%20of%20the%20IAF%20MLA%2C%20it%20is%20required%20to%20recognise%20certificates%20and%20validation%20and%20verification%20statements%20issued%20by%20conformity%20assessment%20bodies%20accredited%20by%20all%20other%20signatories%20of%20the%20IAF%20MLA%2C%20with%20the%20appropriate%20scope

19 True for all ANAB accredited product evaluation agencies and all International Trade Agreements.

20 https://www.justice.gov/crt/deprivation-rights-under-color-law AND https://www.justice.gov/atr/mission

21 Unless otherwise noted, the links referenced herein use un-amended versions of the 2024 International Code Council (ICC) 2024 International Code Council (ICC) model codes as foundation references. Mississippi versions of the IBC 2024 and the IRC 2024 are un-amended. This material, product, design, service and/or method of construction also complies with the 2000-2012 versions of the referenced codes and the standards referenced therein. As pertinent to this technical and code compliance evaluation, CBI and/or DrJ staff have reviewed any state or local regulatory amendments to assure this report is in compliance.

22 See Adoptions by Publisher for the latest adoption of a non-amended or amended model code by the local jurisdiction. https://up.codes/codes/general

23 See Adoptions by Publisher for the latest adoption of a non-amended or amended model code by state. https://up.codes/codes/general

24 https://www.ecfr.gov/current/title-24/subtitle-B/chapter-XX/part-3282/subpart-A/section-3282.14

25 https://www.ecfr.gov/current/title-24/subtitle-B/chapter-XX/part-3280

26 https://www.ecfr.gov/current/title-24/subtitle-B/chapter-XX/part-3280#p-3280.2(Listed%20or%20certified); https://up.codes/viewer/mississippi/ibc-2024/chapter/2/definitions#listed AND https://up.codes/viewer/mississippi/ibc-2024/chapter/2/definitions#labeled

27 The Thermomechanical Analysis (TMA) Inflection Temperature is a measure of the temperature at which a plastic material begins to soften and deform under a specific load. It is a crucial property for determining how a material will behave when exposed to heat, especially in high-temperature applications.

28 https://up.codes/viewer/mississippi/ibc-2024/chapter/17/special-inspections-and-tests#1703.4

29 https://www.ecfr.gov/current/title-24/subtitle-B/chapter-XX/part-3280#:~:text=All%20construction%20methods%20shall%20be%20in%20conformance%20with%20accepted%20engineering%20practices%20to%20insure%20durable%2C%20livable%2C%20and%20safe%20housing%20and%20shall%20demonstrate%20acceptable%20workmanship%20reflecting%20journeyman%20quality%20of%20work%20of%20the%20various%20trades

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[30] https://www.ecfr.gov/current/title-24/subtitle-B/chapter-XX/part-3280#:~:text=The%20strength%20and%20rigidity%20of%20the%20component%20parts%20and/or%20the%20integrated%20structure%20shall%20be%20determined%20by%20engineering%20analysis%20or%20by%20suitable%20load%20tests%20to%20simulate%20the%20actual%20loads%20and%20conditions%20of%20application%20that%20occur

[31] Qualification is performed by a legislatively defined Accreditation Body. ANSI National Accreditation Board (ANAB) is the largest independent accreditation body in North America and provides services in more than 75 countries. DrJ is an ANAB accredited product certification body.

[32] https://anabpd.ansi.org/Accreditation/product-certification/AllDirectoryDetails?prgID=1&orgID=2125&statusID=4#:~:text=Bill%20Payment%20Date-,Accredited%20Scopes,-13%20ENVIRONMENT.%20HEALTH

[33] See Code of Federal Regulations (CFR) Title 24 Subtitle B Chapter XX Part 3280 for definition: https://www.ecfr.gov/current/title-24/subtitle-B/chapter-XX/part-3280

[34] 2021 IBC Section 104.11

[35] 2021 IRC Section R104.11

[36] 2018: https://up.codes/viewer/wyoming/ifc-2018/chapter/1/scope-and-administration#104.9 AND 2021: https://up.codes/viewer/wyoming/ibc-2021/chapter/1/scope-and-administration#104.11

[37] Approved is an adjective that modifies the noun after it. For example, Approved Agency means that the Agency is accepted officially as being suitable in a particular situation. This example conforms to IBC/IRC/IFC Section 201.4 (https://up.codes/viewer/mississippi/ibc-2024/chapter/2/definitions#201.4) where the building code authorizes sentences to have an ordinarily accepted meaning such as the context implies.

[38] https://up.codes/viewer/mississippi/ibc-2024/chapter/17/special-inspections-and-tests#1707.1

[39] Multilateral approval is true for all ANAB accredited product evaluation agencies and all International Trade Agreements.

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