

# PLANNING & DEVELOPMENT SERVICES

## ADVISORY



### Duct Wrap, What Can it Be Used For?

#### Purpose

This bulletin is to inform designers, staff, developers, builders and sub-contractors on the permitted use of duct wrap on commercial buildings.

The City of Regina is aware of duct-wrap products on the market that state they can be used for a variety of applications. Some wraps state they can be used for reducing clearance to combustibles, and some state that they can be used to replace required horizontal or vertical services spaces (eg. The duct wrap is used to replace required rated shafts). The City of Regina has gathered some information regarding the Code requirements and how this impacts the use of duct-wrap products:

#### Grease Duct Enclosure Applications

1. NBC 2015, Article 6.3.1.7 requires that systems for the ventilation of commercial cooking equipment follow the NFPA 96 standard, except as provided in Article 3.6.3.5.
2. NBC 2015, Article 3.6.3.5 calls for fire separations enclosing grease ducts to conform to NFPA 96. However, it states that the fire-resistance rating of both field-applied and factory-built grease duct enclosures shall be determined based on CAN/ULC-S144.
  - a. Note: CAN/ULC-S144 is not referenced in NFPA 96 for field-applied or factory-built grease ducts (see NFPA 96, Articles 4.3.1.2 and 4.3.3.1). NBC 2015 is stating that an additional standard must be met for determining if field-applied grease duct enclosures or factory-built grease duct enclosures are compliant.
3. NFPA 96, Subsection 7.7.1 discusses the requirements for grease duct enclosures (such as horizontal service spaces or vertical service spaces, to use NBC language) where ducts penetrate rated assemblies. This is further supplemented by the following Subsections in Section 7.7 regarding the fire resistance ratings required, clearances for the enclosures, etc. The Annex provides Figures A.4.2.(a) to (e) to illustrate the requirements as well.
  - a. Notably, NFPA 96, Article 7.7.1.5 allows for a factory-built or field-applied enclosures (eg. Duct wrap) to be used instead of a horizontal service space or vertical service space, as long as proper firestopping is provided where the system penetrates rated assemblies. NFPA 96, Section 4.3 then provides the additional information about the requirements for field-applied and factory-built grease duct enclosures. Again, it must be noted that NBC 2015, Article 3.6.3.5 requires that the factory-built or field-applied enclosures be tested to CAN/ULC-S144 (which is not referenced in NFPA 96).

#### Grease Duct Summary

To utilize NFPA 96, Subsection 7.7.1 to use a duct wrap to replace an enclosure, a designer will need to show that the product has been tested to CAN/ULC-S144 in order for it to be evaluated as an Acceptable Solution. If the product has not been tested to CAN/ULC-S144, it will not be eligible to be considered as an Acceptable Solution, and an Alternative Solution would be required for evaluation (see NBC 2015, Division A, Article 1.2.1.1).

## NFPA 96 Clearance Reduction

1. NFPA 96, Article 4.2.3.3 allows for clearance reduction systems to be utilized when evaluated for the purpose in accordance with ASTM E 2336
2. NBC 2015 provides no further requirements, as Sentence 3.6.3.5.(2) is specific to the fire resistance rating of grease duct enclosure assemblies (and so does not modify the NFPA 96 requirements for determining suitability of a material for reducing clearance to combustibles).

### Clearance Reeducation Summary

A product tested to ASTM E 2336 for reducing clearances can be evaluated as an Acceptable Solution.

## Other Service Space Applications—Shafts, Chutes and Service Spaces

1. Where NBC 2015 requires fire separation of vertical service spaces (eg. Shafts) or horizontal service spaces, the fire separations are required to be provided based on Code requirements to be evaluated as an Acceptable Solution. For example, Sentence 3.6.3.3.(2) requires that a linen chute or refuse chute be contained in a shaft (made up of fire separations) having a certain fire resistance rating.
2. The fire resistance rating of fire separations is determined by testing through CAN/ULC-S101 or on the basis of Appendix D (see NBC 2015, Article 3.1.7.1).
3. The Acceptable Solutions in code do not allow for a duct-wrap product to replace a shaft (other than Article 3.6.3.5 allowing grease duct enclosures to conform to NFPA 96, as long as they have been tested to CAN/ULC-S144. See discussion above).

### Service Space Summary

If a designer wishes to use a specialized product to replace a required vertical service space or horizontal service space (other than for the acceptable grease-duct application), an Alternative Solution would be required for evaluation.

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