Part 1 General

1.1 Summary

.1 Unless otherwise indicated, follow the standards below when specifying roofing work. These standards are not intended to restrict or replace professional judgment.

1.2 Guarantee

.1 The minimum guarantee shall be five (5) years as supplied by the roofing contractor. The QMRA special five-year warranty shall not be required.

Part 2 Products

2.1 Preferred Products

.1 Roofing systems shall be chosen to reduce solar heat gain and heat island effect. Use roofing materials that have a three-year aged SRI value equal to or greater than 64. If three-year aged value information is not available, use materials that have an initial SRI value equal to or greater than 82. A green roof is a preferred solution if structural and budgetary constraints are met.

.2 For products from manufacturers with Corporate Sustainability Reports (CSRs), which may contribute to LEED® v4 MR Credit Building Product Disclosure and Optimization – Sourcing of Raw Materials, refer to:

.1 GRI Sustainability Disclosure Database http://database.globalreporting.org/search

.2 UN Global Compact www.unglobalcompact.org/participation/report/cop/create-and-submit/active

.3 For products with recycled content that may contribute to LEED® v4 MR Credit Building Product Disclosure and Optimization – Sourcing of Raw Materials, refer to:

.1 SCS Global Services www.scsglobalservices.com/certified-green-products-guide

.2 UL Environment http://productguide.ulenvironment.com

.3 Green Circle Certified http://greencirclecertified.com/database/

.4 For products with a manufacturer inventory and/or certified Cradle to Cradle (C2C) and/or with Health Product Declarations (HPDs), for LEED® v4 MR Credit Building Product Disclosure and Optimization – Material Ingredients, refer to:

.1 Declare Product Database www.living-future.org/declare-products

.2 Cradle to Cradle Products Innovation Institute http://www.c2ccertified.org/products/mhcregistry

.3 HPD Library http://hpd.smithgroupjjr.org

.4 Pharos Project https://www.pharosproject.net

.5 Materials that are locally sourced (extracted, manufactured, and purchased) within 160 km (100 miles) are preferred and will increase cost values for credit calculations in the Materials and Resources Building Product Disclosure and Optimization credits.

2.2 Membrane Roofing for Flat Roof

.1 Non-combustible deck:

.1 Heavy duty composite reinforced modified SBS membranes with a heat-welded base sheet and a heat-welded cap sheet. Both faces of the base sheet are covered with a thermofusible plastic film. The bottom surface of the cap sheet is covered with a thermofusible plastic film and the top surface is protected by coloured granules.

Note: Membranes should be installed over a non-combustible panel.

.2 Specified products:

.1 Cap sheet: Soprastar Flam HD GR with highly reflective white slate flakes or, as a second choice, Sopraply Traffic Cap 560 granulated by Soprema, or approved equivalent. The second choice is proposed as an alternative where there is a good reason of not using a highly reflective membrane.

.2 Base sheet: Sopraply Base 520 by Soprema or approved equivalent.

.2 Combustible deck (use of open flame or torch are not permitted on combustible deck):

.1 Heavy duty composite reinforced modified SBS self-adhesive cap sheet membrane with granular protection adhered over a prefabricated mineral wool base sheet panel. The panel should be installed with hot asphalt, cold adhesive or mechanical fasteners. Note: System to be applied at a minimum temperature of 10°C.

.2 Specified products:

.1 Cap sheet: Colphene HR GR granulated or Soprastar Stick HD GR with highly reflective white slate flakes by Soprema, or approved equivalent.

.2 Prefabricated base sheet panel: Xpress board (sanded surface) by Soprema, or approved equivalent.

.3 Heavy duty composite reinforced modified SBS cap sheet membrane with sand protection adhered over a prefabricated mineral wool base sheet panel with SEBS modified asphalt. The cap sheet should be covered with crushed stone adhered with SEBS modified asphalt. The panel should be installed with hot asphalt, cold adhesive or mechanical fasteners.

.4 Specified products:

.1 Cap sheet: Colply Base sheet 410 by Soprema, or approved equivalent.

.2 Prefabricated base sheet panel: Xpress board (sanded surface) by Soprema, or approved equivalent.

.3 SEBS asphalt: Soprasphalte M by Soprema, or approved equivalent.

.4 Gravel: Crushed stone ranging in size from 5 to 20 mm. [Crushed marble stone ranging in size from 5 to 20 mm.]

.5 Single ply membranes such as EPDM or PVC shall be avoided.

.6 Inverted roof configurations with insulation on top to protect the membrane are an alternative wherever the geometry of the roof and the structural capacity of it will allow, and especially in areas of high traffic for mechanical system maintenance or for access to scientific instrumentation. The ballasts selected shall have a highly reflective surface to reduce heat island effect.

2.3 Insulation Board:

.1 Mineral wool board insulation with a rigid upper layer for durability and enhanced strength. The board is impregnated with a bitumen surface which is compatible with torch applied membranes.

Specified products: Soprarock DD Plus by Soprema, or approved equivalent.

2.4 Sloped Insulation:

.1 Description: closed-cell polyisocyanurate foam core integrally laminated to heavy non-asphaltic fibre-reinforced grey felt facers.

Specified products: E'NRG'Y by John's Manville, or approved equivalent.

2.5 Vapour Barrier:

.1 Self-adhesive Air/Vapour Barrier:

.1 Description: Self-adhesive air/vapour barrier membranes composed of bitumen modified with thermoplastic polymers and high-density polyethylene film.

.2 Specified products: SOPRAVAP'R by SOPREMA, or approved equivalent.

.2 Modified Bitumen Vapour Barrier:

.1 Description: SBS modified bitumen membrane reinforced with a fibreglass mat. The upper surface is sanded; the under face is covered with a thermofusible plastic film.

.2 Specified products: ELASTOPHENE SP by SOPREMA, or approved equivalent.

2.6 Fire Inspector for Open Flame Roofing Activities'

.1 Whenever a roofer is required to use an open flame as part of his roofing activities, a fire inspector shall be positioned full-time on the roof deck adjacent to the flame operation to assure safety on the roof. The inspector is to stay on the roof for a minimum of thirty minutes following extinguishing of last flame.

.2 Open flame roofing operations are not permitted on old wood decks.

2.7 Roof Traffic Treads

.1 Traffic treads shall be installed and integrated into membrane systems around all mechanical equipment including chimneys and ventilation exhaust shafts.

.2 Specified products: Sopramat rubber mat by Soprema, or approved equivalent.

2.8 Clearance of Mechanical Equipment with Respect to the Roof Membrane

.1 Mechanical equipment bases should be detailed to provide for easy access and maintenance of the membrane beneath the equipment. A minimum of 750 mm clearance should be provided, 900 mm is preferred.

2.9 Mechanical Equipment

.1 All new mechanical equipment installed on roofs must be anchored to the roof in accordance with the National Building Code.

2.10 Roof Drains

.1 Two-piece mechanical drains, in which the upper sleeve is bolted to the lower sleeve, should be avoided. Loosened screws cause a persistent maintenance problem and promote roof leaks.

.2 Gravel stops on roof drains should be plastic, not galvanized metal.

2.11 Metal Gravel Stops at Roof Edges

.1 Traditional commercial details with metal gravel stops integrated into the roof membrane at the roof edge to provide a drip should be avoided. They cause premature wear of the membrane. The preferred detail is the creation of a small parapet to define a drainage basin with an interior roof drain.

2.12 Flashing Materials

.1 Aluminium flashing materials are preferred over galvanized steel. Flashings on new roofs should be in aluminium.

.2 Vent pipe covers should be in plastic instead of copper or metal.

2.13 Pitch Pockets

.1 The preferred pitch pockets is the detail “Chem Curb System” as manufactured by Chem Link Inc. (1-800-826-1681) (www.chemlinkinc.com), or approved equivalent.

.2 Prefabricated curb system assembled on site and filled with fast setting, solvent free IC Duomastic. Such as Interclip system by Soprema, or approved equivalent.

2.14 Access to Roof Decks and High Roofs

.1 During design of roofing retrofits, consideration should be taken to assure adequate roof access to all roof decks or roof sections for maintenance purposes. The installation of catwalks and/or ladders should be provided as required.

.2 Consideration should be taken to assure adequate security on roofs for the workers of the retrofit, as well as the ones doing maintenance: Integrate approved CSST anchors on the roofs to allow for all workers to be attached with a harness.

2.15 Cleaning Up after Completion of Roofing

.1 Care should be taken to assure that all roof drains are cleaned at the end of a roofing project and that all construction materials are removed from the roof membrane surface.

2.16 Cleaning of Roof Drains

.1 After completion of roofing and before leaving the site, the roofer will verify that the roof drain(s) operate and are free flowing all the way to the municipal sewer. The drain(s) will be flushed with a mechanical flush all the way to the exterior foundation wall of the building.

END OF SECTION