



NRCA Statement Responding to IARC's Recent Announcements Regarding the Results of Its Reevaluation of the Potential Carcinogenicity of Asphalt and Asphalt Emissions in Roofing Operations

On Oct. 20, 2011, the International Agency for Research on Cancer (IARC) posted on its website a one-page statement indicating it had completed a re-evaluation of occupations involving exposures to bitumen, the European term for asphalt. In the December 2011 issue of the journal *Lancet Oncology*, IARC published a two-page news article providing limited additional information about its decisions. According to these announcements, "occupational exposures to oxidized bitumens and their emissions during roofing" are classified in IARC Group 2A as "probably carcinogenic to humans." The basis for this determination will not be fully understood until IARC publishes the complete monograph addressing asphalt in a year or so.

Based on more than 20 years of research dedicated to the safe use of asphalt in roofing, NRCA believes IARC's finding is at odds with the available scientific evidence. NRCA will fully address the basis for the IARC finding once the monograph becomes available; however, we are concerned, in the interim, the brief IARC announcements may cause confusion and undue worry among workers, homeowners and others who use or may come in contact with asphalt roofing products. This preliminary statement addresses these concerns.

1. IARC's finding does not apply to building occupant or public exposures to oxidized asphalt or to nonroofing operations.

It is important to understand the IARC finding relates only to occupational exposures during roofing operations. It does not pertain to asphalt roofing products in place on roofs or manufactured roofing products in stores or plant inventories. It also does not apply to rainwater runoff from roofs, roofing plant emissions, or to building occupants or others in the vicinity of asphalt roofing work nor does it apply to nonroofing operations such as recycling, waterproofing, sealing, paints and coatings, and flooring. IARC's announcements to date contain no reason for concern about an asphalt-related cancer hazard in these settings.

2. The scientific rationale for IARC's finding is expected to focus on hot-applied roof systems, which represent a small part of the asphalt roofing industry.

Even in an occupational context, we expect the scientific rationale for IARC's finding, when it is published in the full monograph, will focus on exposures occurring during roofing work involving hot liquid oxidized asphalt. Roofing workers and others should recognize these operations, once dominant in low-slope roofing work, have seen a marked decline in market share since the 1980s and now represent a small part of the industry.

Currently, 94 percent of asphalt roofing production is applied "cold" (i.e., at ambient temperatures, without heating) or is "soft-applied" using torches or hot air welders to heat the material sufficiently to ensure proper adhesion to a substrate. For example, asphalt shingles dominate the residential roofing market in North America and are applied using mechanical fasteners (nails or staples). In addition, many types of asphalt are used in the modern roofing industry, including

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straight-run asphalts. Many cold- and soft-applied roofing products made from straight-run asphalt, including many polymer-modified bitumen roof systems and saturated asphalt felts, are not covered by the IARC finding at all, and they all involve much lower or no potential exposures to asphalt and its constituents. A complete description of the broad range of asphalt materials and application practices used in today's roofing industry can be found in a publication published by NRCA and other roofing industry groups, it is available at www.bwa-europe.com/A_Global_Perspective_edn2.pdf.

3. Based on the brief summaries published to date, IARC's finding that occupational exposures to oxidized asphalt in roofing application operations are "probably carcinogenic to humans" appears to be inconsistent with the available scientific evidence.

Although we have at the moment only a glimpse of the scientific rationale for IARC's finding, the brief summary IARC has provided to explain its finding appears to be at odds with the available studies of workers exposed during hot asphalt roofing operations.

Specifically, IARC's claim that the body of available data from studies of roofing workers "points to an association" between exposures and cancer lacks persuasive scientific support. In nearly every case, the scientific validity of these studies has been compromised by the inability to exclude the effects of other known carcinogenic agents that are entirely unrelated to asphalt but often are present in these study populations. These factors, which health scientists call "confounders," include coal tar, asbestos and lifestyle factors such as tobacco smoking. The only two human studies that have excluded the effects of such confounding exposures to other carcinogens – a large multi-country study of asphalt workers in Europe and a U.S. study of asphalt processing and roofing manufacturing workers – have not found an association between asphalt fumes and lung cancer. Although skin-painting studies in laboratory animals indicate fumes generated during hot asphalt roofing application work are associated with weak tumor induction in mouse skin, well-conducted studies in humans generally are accorded greater weight by scientists and regulators.

NRCA has sponsored or supported a broad range of initiatives during the past 20 years in an effort to fill the gaps in the scientific evidence regarding the possible carcinogenicity of asphalt fumes and identify measures to control workplace exposures to asphalt fumes. NRCA also has partnered with the National Institute for Occupational Safety and Health; United Union of Roofers, Waterproofers and Allied Workers; and other industry groups to evaluate and disseminate information about available exposure control measures in hot asphalt construction operations. Additional information about these initiatives can be found in the industry description mentioned previously. NRCA intends to continue its vigorous efforts to ensure the potential health hazards and risks of asphalt fume exposures to workers exposed in roofing manufacturing or application operations are well-characterized and effective programs are available to protect worker health.

Questions about the IARC announcement should be directed to NRCA's Associate Executive Director of Risk Management Tom Shanahan at (800) 323-9545, ext. 7538 or tshanahan@nrca.net.