



ARMA Health, Safety, and Environment Committee Update

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HSE Committee Chair**

ARMA Fall Board of Directors Meeting

November 14, 2019



ARMA Health, Safety, and Environment Committee

- Washington State Roofing Materials Assessment
- Emissions Factors Database
- Regional Environmental Activity
- General HSE Activities/Updates

Washington State Roofing Materials Assessment



Roofing Materials Assessment: Investigation of Toxics In Roof Runoff at the Washington Stormwater Center

Prepared by
Nancy Winters, Lisa Rozmyn, and John Stark
Washington Stormwater Center

February 2018

Washington State Roofing Materials Assessment



<p>WSU/WSC Conclusions</p>	<p>Asphalt roofing significant contributor to metals in stormwater (Zn-88%, Ca-60%, Cu-11%, Ar-19%)</p>	<p>New asphalt shingles, release <u>low</u> concentrations of metals.</p> <p>Elevated levels measured: -Cu and Ar from treated wood - Cu from the Copper Roof - Zn from the Zinalume® and EPDM</p>	<p>Slightly aged shingles released lower levels metals. Some toxicity to aqueous species was measured.</p> <p>Coho Salmon: - 0% Mortality C. Dubia: -87% mortality Zebra Fish: - Developmental abnormalities and mortalities for all panels</p>	<p>WSU/WSC formal journal publication without ARMA involvement or notification (McIntyre paper)</p> <p>Washington Department of Ecology Study - Copper and Zinc in Urban Runoff, Phase 2 — Rainwater Washoff Monitoring</p>
<p>ARMA Conclusions</p>	<p>Conclusions unreasonable, entered into partnership study</p>	<p>Conclusions support shingle use, especially in contrast with wood shake</p>	<p>Good overall performance by shingles. Concerns about lack of fate/transport information and language used in the WA report.</p>	

Washington State Roofing Materials Assessment

- ARMA contracted EcoStat Inc. to perform an independent review of the WSC study.
 - EcoStat review of study conclusions:
 - Statistically weak
 - Poor methodology

Washington State Roofing Materials Assessment

- Additional publications recently discovered
 - McIntyre paper
 - The paper concludes that “could inform policy changes for the Puget Sound region,” including reduction in the copper content of AR shingles may be warranted
 - Department of Ecology 2019 study
 - Cited in McIntyre paper, previously unknown to ARMA
 - Concludes that “the bulk of copper released from the materials analyzed would originate from asphalt shingle roofs with algae-resistant granules.”

Washington State Roofing Materials Assessment

ARMA Next Steps:

- Many thanks to all who have participated on the Task Force. Upon consideration of the information, the ARMA Executive Committee determined that ARMA has concluded its information gathering role and concluded that further action on this issue should be undertaken by individual companies, not by ARMA.

Emissions Factors Database

- Draft report completed and a summary presented by Trinity at the Summer 2019 HSE Committee meeting
- Additional review by Emissions Factors Task Force led to a request for revisions of the data presentation and calculations
 - EF calculation methodology in the current draft of the report should be changed to maintain consistency with previous analyses.
 - Trinity sent an additional request to participants to provide plant information (blinded prior to report generation) and have started recalculating the emission factors.
- Revised draft report is expected next week
 - Use of the new emissions factors is intended as a supplement to previous factors.

Regional Environmental Activity

- Cleaner Air Oregon or CAO
 - Keeping a close watch on CAO rules, could start taking hold outside Oregon.
 - ARMA is a member of Oregon Business & Industry (OBI) and receives regular updates with ongoing advocacy efforts.
 - Continued membership in OBI
- California Air Resources Board (CARB)
 - CARB has proposed to add over 600 substances subject to the inventory provisions of CA's Air Toxics Hot Spots Program
 - Public meeting will be held November 22, 2019
 - Potential for other states to adopt similar rules
 - Rule 1168 - 2022 Technology Assessment – Staff has been added to stakeholder distribution list
- Cal/OSHA
 - Elimination of email reporting once an online portal is operational
 - Phone-in still acceptable

General HSE Activities/Updates

- Staff regularly communicates with HSE committee
- ARMA safety contest administration
- Other items of interest as they are identified



Conclusion

- Questions or comments?