Environmental Carcinogens Radon and Vapor Intrusion

Kentucky Cancer Consortium January 29, 2013 Kyle Hoylman, Kentucky Association of Radon Professionals



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Topics for Discussion

- Radon versus Vapor Intrusion
- Radon Overview
- Entry Points and Sources
- Know Your Number
- Kentucky Radon Statistics
- Kentucky Radon Maps
- Radon Policy Initiatives
- Vapor Intrusion Policy Initiatives
- Cancer Action Plan Objectives and Strategies

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Radon Overview

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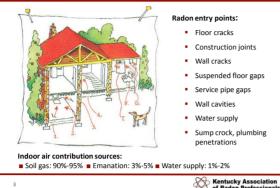
Radon is a naturally-occurring, cancercausing radioactive gas that:

- you can't see, smell or taste
- causes an estimated 25,000 deaths each year
- is the leading cause of lung cancer among non-smokers
- is widely regarded as the leading environmental cause of cancer mortality

The only way to know if a building has elevated radon levels is to have it tested.

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Radon Entry Points and Sources



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Know Your Number



	Radon Level*:	Equates to ¹ :
	2.0 pCi/L	100 chest x-rays / year
		4 cigarettes / day
	4.0 pCi/L	200 chest x-rays / year
		8 cigarettes / day
	8.0 pCi/L	400 chest x-rays / year
		16 cigarettes / day
	20.0 pCi/L	1,000 chest x-rays / year
		40 cigarettes / day
EPA action level = 4.0 pCi/L	40.0 pCi/L	2,000 chest x-rays / year
WHO action level = 2.7 pCi/L		80 cigarettes / day

ed in o s per liter of air (pCi/L) ¹US Department of Health and Human Services. Public Health S for Radon. (1990).

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Kentucky Radon Statistics



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Kentucky radon statistics^{1,2}:

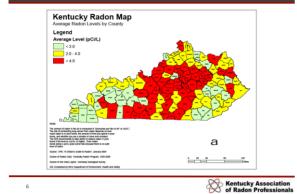
- . Radon found in elevated levels in every county in state.
- Nationwide, 1 in 15 (7%) of homes contain elevated levels versus 47% of all Kentucky homes.
- Nationwide, average home tests at 1.3 pCi/L versus 6.7 pCi/L average for Kentucky homes.
- In some areas of Kentucky, more than 65% of all homes will test above 4.0 pCi/L
- Kentucky leads our nation in lung cancer death rates - this isn't all because of smoking

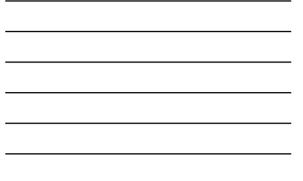
Kentucky Radon Program. Radon Test Results. (2009) or Air Division. A Citizen's Guide to In. EPA 402-K-09-001, January 20

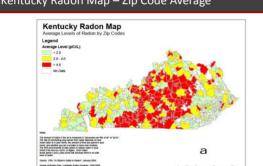
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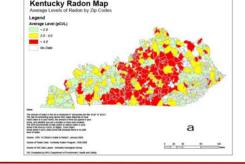
Kentucky Radon Map – County Average







Kentucky Radon Map – Zip Code Average



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Radon Policy Initiatives

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Kentucky Existing Policies:	Additional Policy Areas (fed or
Contractor Law (KRS 211.9103	state) - Prevention:
through 211.9135)	 New Construction
 Seller Disclosure (KRS 324.360) 	 Residential Testing and
	Mitigation
Kentucky Pending Policies:	 Multi-Family Testing and
 KAR Contractor Law 	Mitigation
	 Schools and Large Buildings
Federal Policy:	Testing and Mitigation
 Indoor Radon Abatement Act 	 Tax Credit, Mortgage
(1988), TSCA	Requirement
 McKinney Homeless Assistance 	-
Act (1988)	

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Vapor Intrusion Policy Initiatives

Kentucky Existing Policies:	Additional Policy Areas (fed or
None	state) - Prevention:
Kentucky Pending Policies:	 Tax Credit, Mortgage
Tax Credit Program, Brownfield	Requirement (insurance and
Revitalization	legal driven)
Federal Policy: Numerous, including: UST, Brownfield, CERCLA, others New guidance pending release from EPA	

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Cancer Action Plan – Objectives and Strategies



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Objective 3.1: By 2016, increase the percentage of buildings that are remediated due to radon levels exceeding the US EPA action level of 4.0 pCi/L

Objective 3.2: Identify evidencebased policies, systems and environmental changes for workers and communities exposed to known environmental carcinogens

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Deficient Mitigation Systems



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