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*The IISRP and our Perspective on
Polymer Modified Asphalt*



Presentation Overview

- ✚ IISRP Background and Organization
- ✚ Polymer Types and Their Applications
- ✚ Capacity Overview and Ability to Meet Demand
- ✚ Raw Material Cycle
- ✚ Virgin Polymers
- ✚ Polymer Producers for Modified Asphalt
- ✚ AMAP/IISRP Cross Fertilization



IISRP Background and Organization

To actively promote and further the interest of producers of synthetic rubber polymers and the interests of the public in manufacturing, engineering, safety, environmental control, transportation, international trade, and other matters of concern to the synthetic rubber industry.



Purpose Statements

- ❖ Promotes the synthetic rubber industry and its benefits to society, stressing its history of innovation, technology improvement, and contributions to an improved quality of life.
- ❖ Promotes research, development, scholarship, and other scientific studies in fields related to synthetic rubber.
- ❖ Provides a forum for information exchange relating to technology and industry innovation among members.



Purpose Statements Continued...

- ❖ **Takes a proactive position with government departments and agencies regarding matters affecting the industry, including environmental health,safety and other timely issues.**
- ❖ **Promotes and encourages development of international trade in synthetic polymers.**

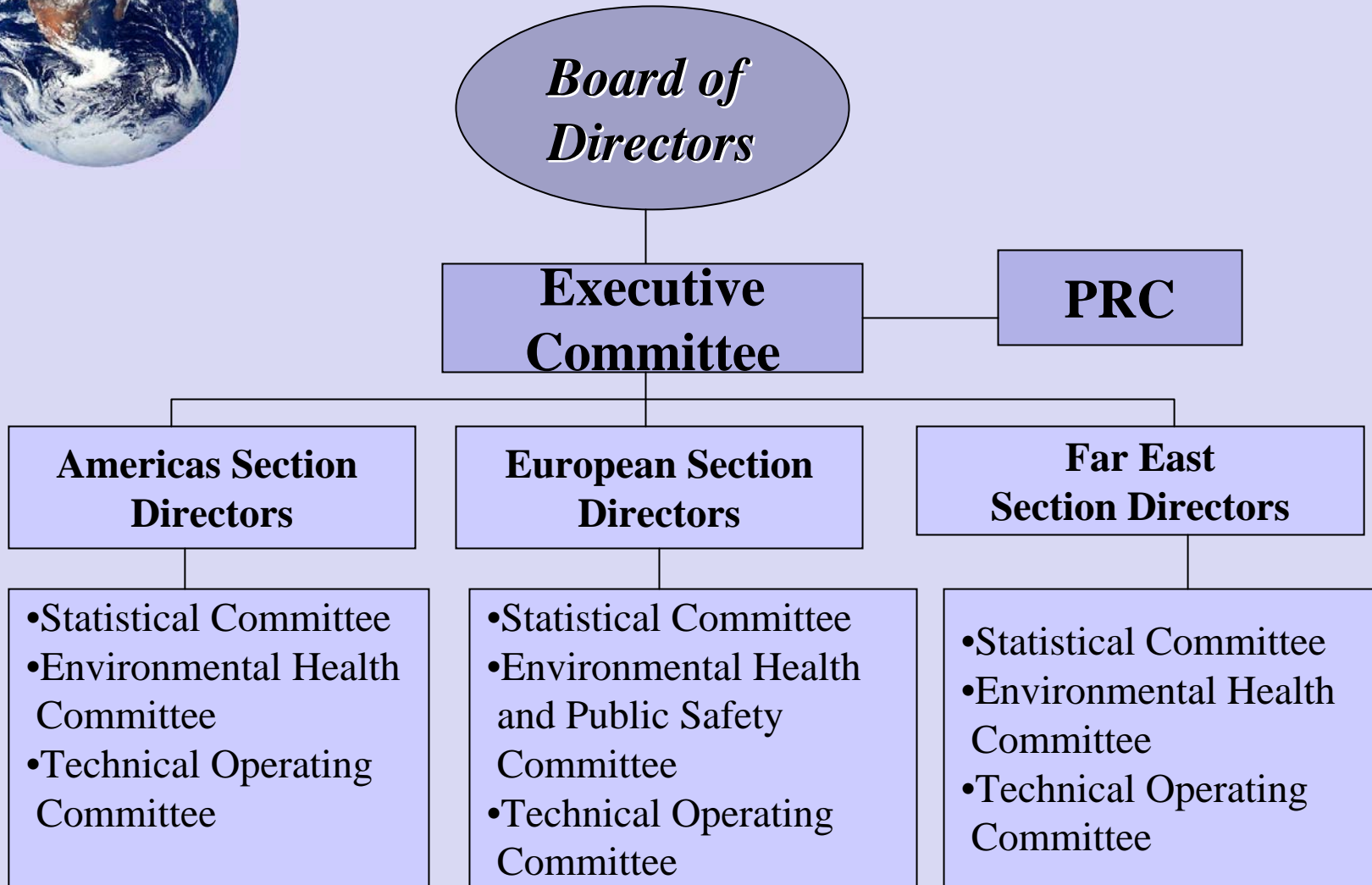


Purpose Statements Continued...

- ✿ **Gathers, receives, prepares, and disseminates information and statistics about the synthetic rubber industry.**
- ✿ **Promotes the characterization and nomenclature of general-purpose synthetic rubber polymers.**

How the Institute is Governed

IISRP





How Standing Committees Serve the Institute

Environmental Health Committee

It identifies health, safety, and environmental health issues relevant to both the public and our industry, including producers, customers, and ultimate users. To appropriately address these issues, it also recommends scientific and regulatory activities to the government and provides oversight of IISRP-sponsored research.



How Standing Committees Serve the Institute Continued...

Technical/Operating Committee

It addresses, develops and recommends appropriate actions related to safety, quality, environmental control, manufacturing, and the areas of logistics, packaging, benchmarking and education for our industry.



How Standing Committees Serve the Institute Continued...

Statistics Committee

It prepares reliable statistics about synthetic rubber for use by member companies and the public to enhance understanding of the industry. In keeping with IISRP By-laws and Section governing bodies, it constantly strives to improve the quality of the data.



To sum up how we function...

❖ *Our Committees Recommend Actions*

❖ *The Board of Directors Decide*

❖ *The IISRP Staff Executes*



Major IISRP Publications...





Major Elastomer Types

Name	Asphalt	Footwear	Adhesives	Tech Goods	Tires	Treads	Plastic
E-SBR	X	X	X	X	X	X	-
S-SBR	X	X	X	X	X	X	-
BR	-	X	-	X	X	X	X
NBR	-	X	-	X	-	-	X
EPDM	X	-	-	X	X	-	X
IIR	-	-	X	X	X	-	X
CR	X	X	X	X	-	-	-
SBC	X	X	X	-	-	-	X
Latex	X	X	-	X	-	X	-



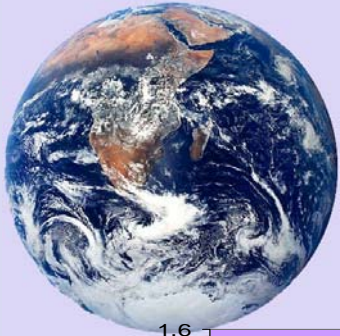
ESBR Capacity

Region	KMT	Percent
Europe	853	21
M. East & Africa	72	2
Latin America	404	10
North America	779	19
Asia & Oceania	1,596	40
Russia	315	8



Styrenic Block Copolymers Capacity

Region	KMT	Percent
Europe	418	28
North America	269	18
Latin America	65	4
Asia & Oceania	755	50



Raw Material Cycle

IISRP

Monomer vs SBR Price Comparison





Virgin Polymers for Asphalt Modification

- ✚ SBS & SBR – Styrene aromatic affinity for asphalt
- ✚ Improves elastic response
- ✚ Easy handling – pellets (SBS) & latex (SBR)
- ✚ Oil extension gives large response at low loadings
- ✚ In-situ crosslinking possible



Polymer Producers for Modified Asphalt (PPMA)

- 1. Promote polymer modified asphalt over Portland cement roadways through emphasis of performance benefits, user delay costs, life cycle cost analysis and safety.**
- 2. Promote R&D efforts and modifications to superpave specifications that reflect performance benefits of polymer modified asphalt.**
- 3. Defend against legislation mandates requiring the recipe use of specific asphalt modifiers or additives that are not based upon performance specifications**



Cross Fertilization



- ✚ Level playing field
- ✚ Grow overall modified asphalt market
- ✚ Based upon performance specifications
- ✚ Promote use of virgin elastomers



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