POLYURETHANE FOAM INSULATION

POLYUREA | FLOORING | WATERPROOFING

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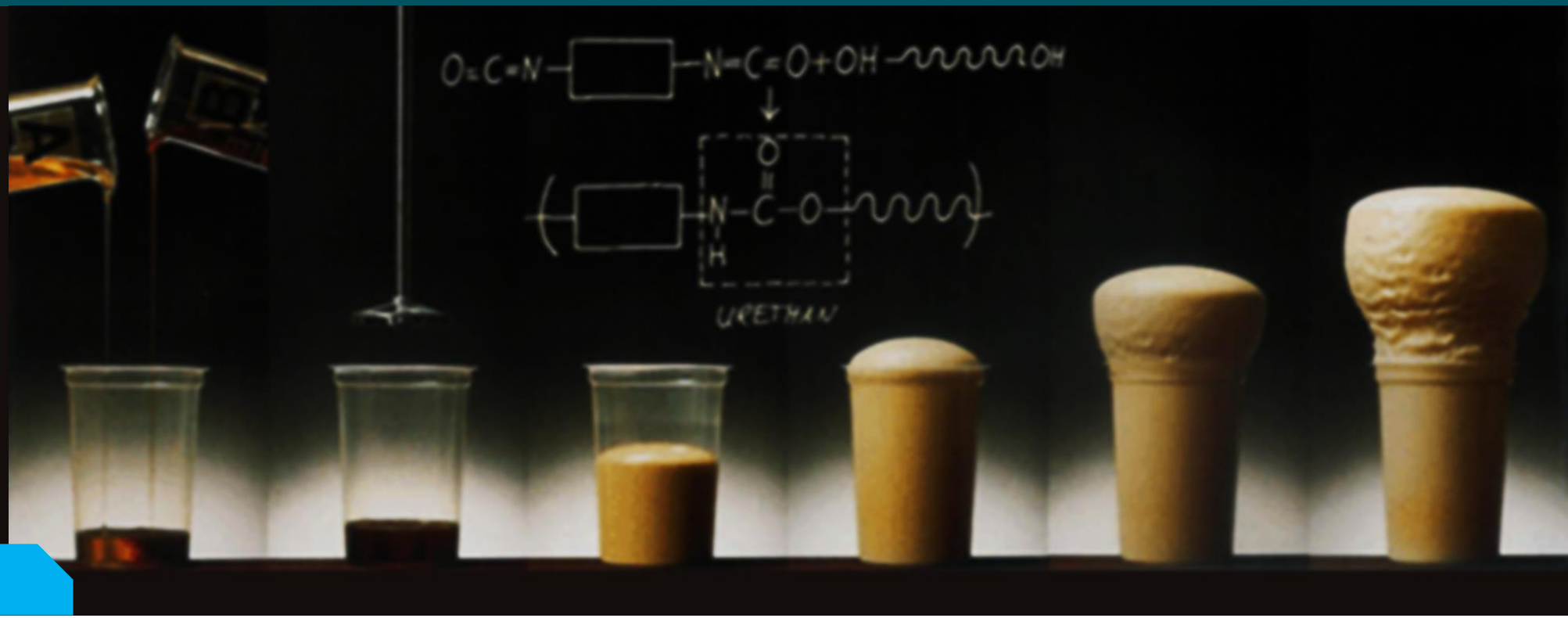
PT. ZETA CODA INDUSTRI

POLYURETHANE SPRAY FOAM (PU FOAM) HISTORY

OTTO BAYER 1937



Otto Bayer and his coworkers at IG Farben in Leverkusen, Germany, first made polyurethanes in 1937.[3][4] The new polymers had some advantages over existing plastics that were made by polymerizing olefins or by polycondensation, and were not covered by patents obtained by Wallace Carothers on polyesters.[5] Early work focused on the production of fibres and flexible foams and PUs were applied on a limited scale as aircraft coating during World War II.[5] Polyisocyanates became commercially available in 1952, and production of flexible polyurethane foam began in 1954 by combining toluene diisocyanate (TDI) and polyester polyols. These materials were also used to produce rigid foams, gum rubber, and elastomers. Linear fibers were produced from hexamethylene diisocyanate (HDI) and 1,4-Butanediol (BDO).

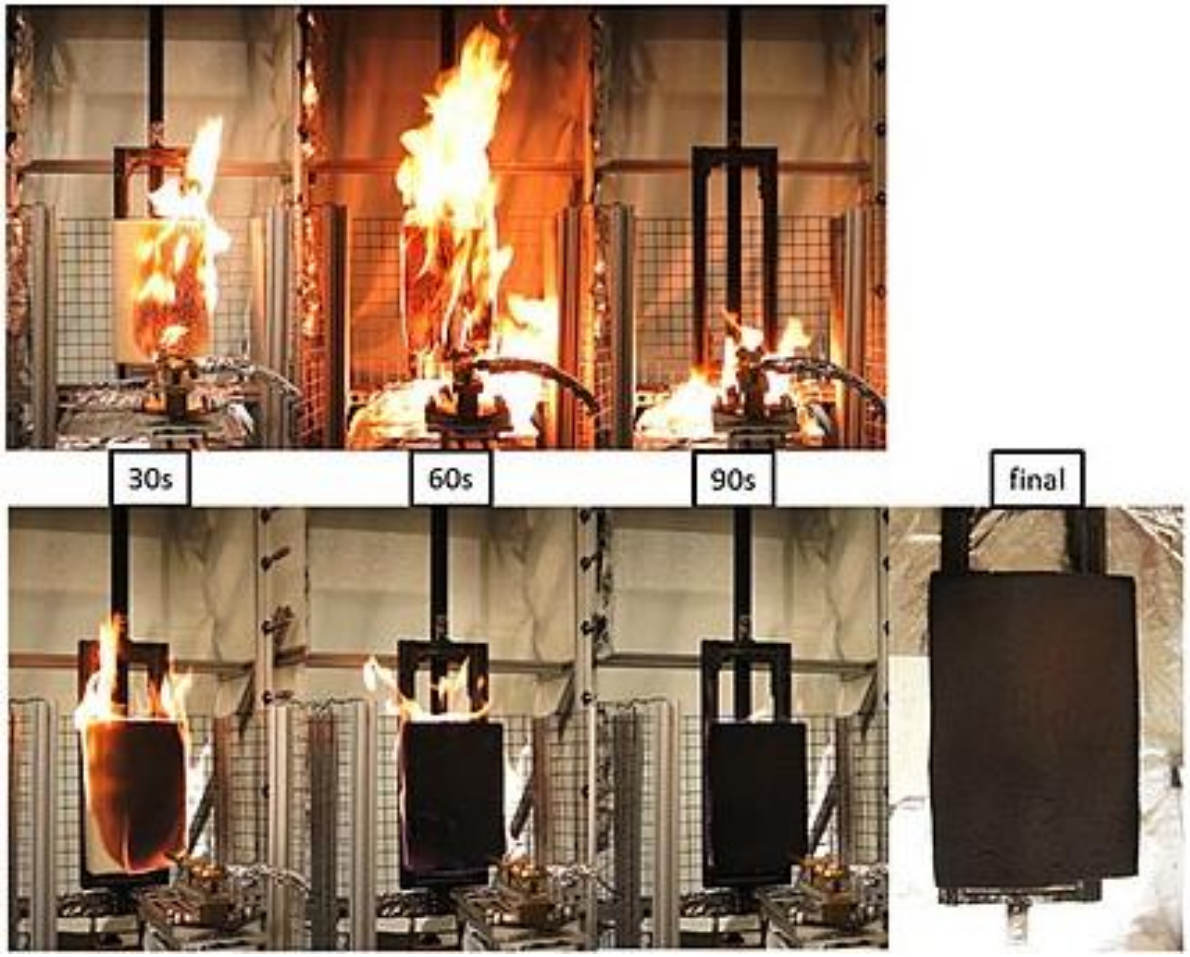
POLYURETHANE SPRAY FOAM (PU FOAM) PEREDAM SUARA & PEREDAM PANAS

SPRAY INSULASI PU FOAM merupakan salah satu teknologi insulasi suara terbaru saat ini, selain itu PU Foam juga mampu peredam panas matahari sehingga atap ruangan yang dilapisi PU Foam membuat ruangan dibawahnya menjadi lebih sejuk.

POLYURETHANE FOAM (PU FOAM) saat ini sangat banyak diminati sebagai bahan insulasi peredam suara karena pemasangan yang cukup mudah, efektif dan efesien, Polyurethane spray foam di aplikasikan dengan cara disemprotkan langsung pada media yang akan di insulasi, sehingga tidak ada celah yang bisa merambatkan suara.

SPRAY INSULASI PUFOAM sangat baik digunakan untuk peredam suara dari sumber kebisingan jalan raya, maupun kebisingan antar ruangan. Polyurethane foam spray juga dapat melindungi pondasi atap maupun plafon dari gangguan rayap maupun karat/korosi.

POLYURETHANE SPRAY FOAM (PU FOAM) TEST BAKAR



FIRE-RETARDANT

Open-flame test. Top: untreated polyurethane foam burns vigorously. Bottom: with fire-retardant treatment

POLYURETHANE SPRAY FOAM (PU FOAM) PEREDAM SUARA & PEREDAM PANAS

Spesifikasi PU Foam

Cream Time	3-5 seconds
Tack Free Time	15-20 seconds
Rise Time	20-35 seconds
Density	32.2 kg/m3
Adhesive Strength:	
PVC	1.4 kgf/cm2
Aluminum plates	1.3 kgf/cm2
Elongation At Break	8-12 %
Bending Strength (kgf/cm2)	1.14
10% Compressive Strength (ASTM D 1621)	0.851 kgf/cm2
Tensile Strength(Perpendicular to rise)	1.1 kgf/cm2
Shear Strength (Perpendicular to rise)	1.4 kgf/cm2
Ozone	ZERO
Service Temperature	-15°C to 70°C

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POLYURETHANE SPRAY FOAM (PU FOAM) PEREDAM SUARA & PEREDAM PANAS

PU Foam sangat cocok digunakan pada :

- **Atap Pabrik**
- **Ballroom**
- **Mall**
- **Home Theater**
- **Studio Musik**
- **Karaoke**
- **Apartment**
- **Shopping Mall**
- **Gedung Bioskop**
- **Rumah Ibadah**
- Rumah Sakit
- Music Studio
- Restaurant
- Gedung Bioskop
- Rumah Ibadah
- Pub / Diskotik
- dll

PU Foam sangat berguna pada dunia industri terkhususnya industri yang membutuhkan insulasi panas seperti FOODPROCESSING ataupun industri yang ingin menghemat penggunaan listrik dikarenakan pemborosan dari Air Conditioner.

- Cold Storage / Cooling Room
- Gardu Listrik
- Tangki Chiller
- Tangki Storage Atap
- Atap Dinding Pabrik & Gudang

POLYURETHANE SPRAY FOAM (PU FOAM) PEREDAM SUARA & PEREDAM PANAS

KEUNGGULAN INSULASI POLYURETHANE SPRAY FOAM

- Spray langsung pada media.
- Tidak perlu perawatan.
- Insulasi bisa Vertical dan Horizontal.
- Anti rayap/tikus.
- Tidak Iritasi bila bersentuhan langsung pada foam.
- Memiliki daya lekat sangat baik sehingga tidak rontok.
- Hasil insulasi tanpa celah
- Sangat ringan sehingga tidak membebani struktur yang ada.
- Proses insulasi sangat cepat, foam kering dalam 10 detik.
- Awet dan tahan lama.
- Tidak beracun dan tidak berbahaya bagi kesehatan.

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POLYURETHANE SPRAY FOAM (PU FOAM) PEREDAM SUARA & PEREDAM PANAS

SPRAY PUFOAM +
ELASTOMARIC COATING SYSTEM

SCREED

SURFACE

RADIANT HEAT

EQUIPMENT & TOOLS

- GRACO EXP 2 New Generation
- Moisture Meter
- Ambient Testing Equipment
- Fluke Ultrasonic Scaning Concrete
- DRY FILM THICKNESS (Dft)

EQUIPMENT & TOOLS

Humadity check : RH meter (Relative humidity: max. 85%) Dew point test :

Type : The Elcometer 319 Dewpoint Meter

With a robust temperature sensor is designed to measure and record all relevant climatic parameters required to determine whether the conditions are suitable for painting

Thickness Check : Wet Film Thikness
Type : Elcometer 112 Wet Film Thickness

Thickness Check : Dry Film thickness

Type : Elcometer 456

Pinhole Test (Holiday Test)
Type :
Elcometer 266 DC Holiday Detector [30kV Rechargeable]

Note : For sampling Area (10 point Area)

EQUIPMENT & TOOLS

Protective Coverall
Safety Work Wear 4510

Respiratory protection (Half Mask Respirator Single) : Adequate ventilation should be provided to maintain solvent concentrations in the workplace below exposure limits. Respiratory protection if there is a risk of exposure to high vapor concentrations. Type : NP 305

Helmet ANSI Z89.1 : Hard hats should be used when falling object hazards may result from activities with proximity to: persons or operations where accidental dropping or loss of material, tools, equipment or other articles could lead to a head injury.
Type : ANSI Type II Helmets

Hand protection : Wear suitable impervious gloves (standart gloves)
Type : Medium 100% Natural Cotton

Eye protection (AS/NZS 1337) : Chemical goggles if there is a risk of splashing.
Type : MSA Z5 Eyewear

Air Circulation Exhoust : Confined space ventilation is one of the most effective means of controlling hazardous atmospheres in restricted spaces. Fans and blowers designed specifically for tight spaces can keep workers safe and promote good ventilation

Safety Shoes : to protect your feet at the workplace. Anyone who works with heavy machinery, hazardous items and chemicals should wear the corresponding safety shoes, to make sure no accidents happen.
Type : Safety Shoes KWD 706

Note : For sampling Area (10 point Area)

PPE (Personal Protective Equipment)

Safety Requirement : Impervious gloves and barrier cream should be used when handling these products. Eye protection should be worn. In case of contact with eyes, wash thoroughly with plenty of water and seek medical advice if symptoms persist. If contact with skin occurs, it must be removed before curing takes place. Wash off with an industrial skin cleaner followed by plenty of soap and water. Do not use solvent. Ensure adequate ventilation when using these products.

HSE PLAN (Confined Space Attacth)

EQUIPMENT & TOOLS

Application Equipment

GRACO EXP-2 NEW GENERATION

Each feature in the Reactor 2 was strategically designed to help your business, with innovations that help your operation run smoothly. Software and hardware enhancements for better spray performance. And new technologies that add to your bottom line.
Reactor 2 gives you

Compact footprint – more room in your spray rig
Ergonomic design – easier to service
Advanced circuit boards
Better spraying performance compared to traditional electric Reactor systems
Troubleshooting made quick and easy with QR codes

Graco InSiteTM gives you
Better control – manage your spray foam or polyurea business wherever you are
Better documentation – automatically collect job log data and spray parameters – lets you confirm the job was sprayed to specifications
Better fleet and crew management
Better cost containment and forecasting

Graco InSite comes standard on all Elite models of Reactor 2

GRACO Fusion PC Gun

GRACO HEATED HOSES

AIR DRYER
penyaring udara kompresor

KOMPRESSOR 10 PK

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