

**“Lack of the money  
is a root of all evil.”**

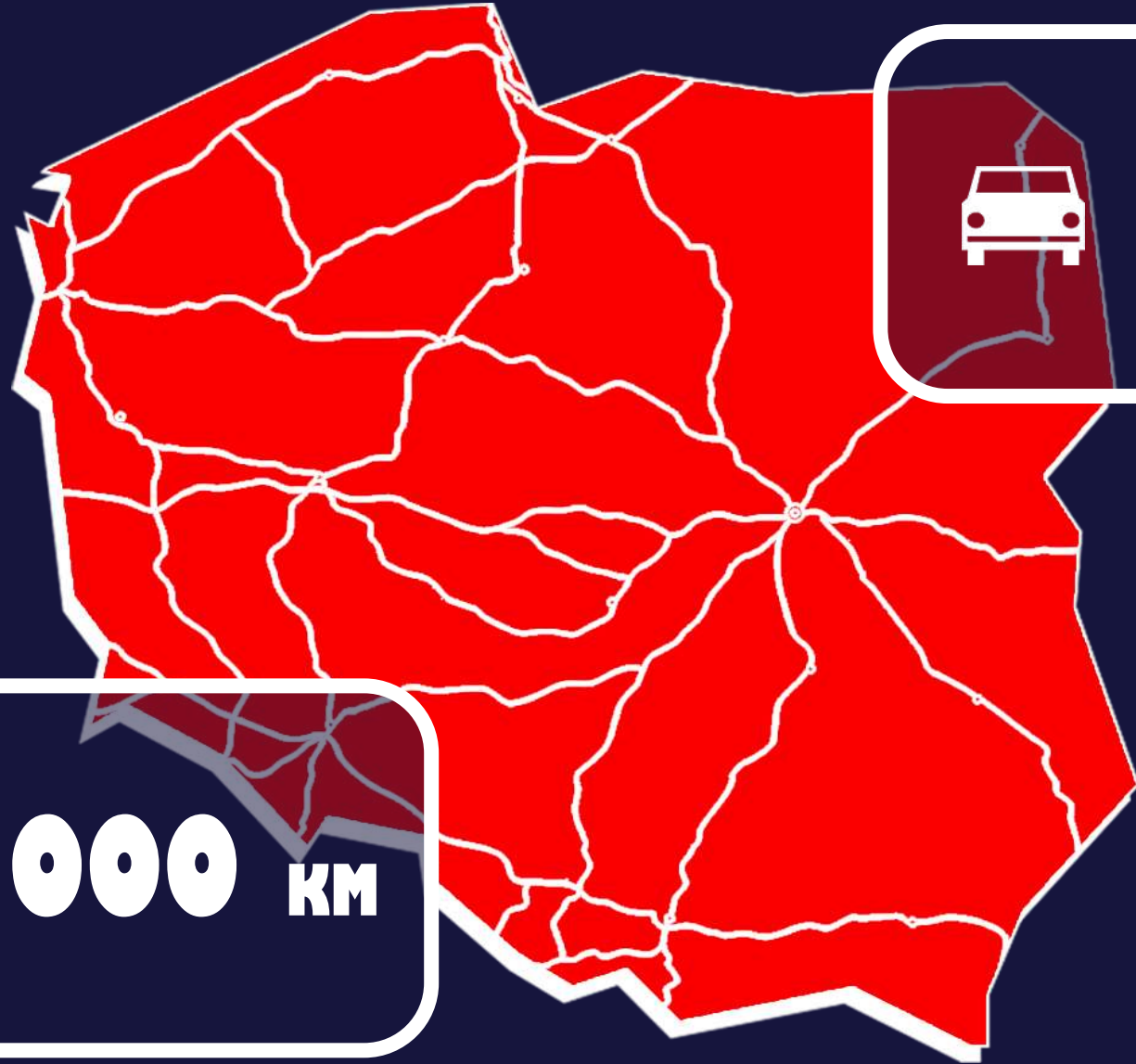
**Mark Twain**

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**Jednoslojni asfaltni kolnici za lokalne ceste – uspješna priča iz Poljske  
One-layer asphalt pavements for local roads – a success story from Poland**

**Međunarodni seminar ASFALJNI KOLNICI 2017  
International seminar ASPHALT PAVEMENTS 2017  
Opatija, 05.–06. 04. 2017.**





**5300 KM**



**2000 KM**

# HUGE CONSTRUCTION SITE



# MOTORWAYS



# EXPRESS ROADS



# EXPRESS ROADS



# PUBLIC ROAD NETWORK IN POLAND



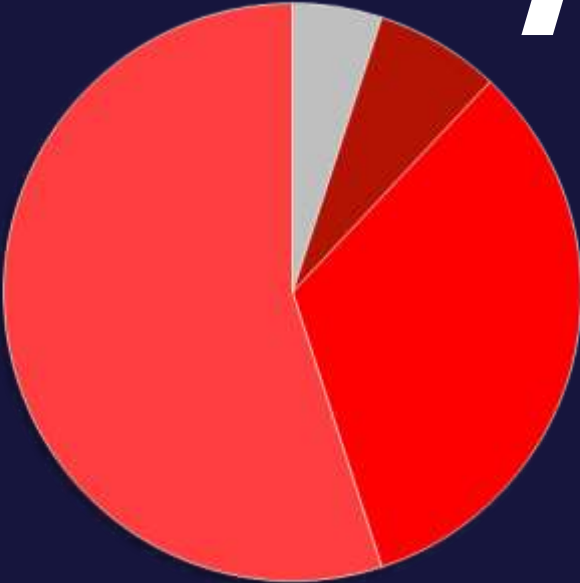
TOTALLY  
**383 313** KM  
OF ROADS

MOTORWAYS  
AND NATIONAL ROADS **5%**

**7%** VOIVODESHIP  
ROADS

COMMUNAL ROADS **55%**

**33%** DISCTRICT  
ROADS



# PUBLIC ROAD NETWORK IN POLAND



TOTALLY  
**383 313** KM  
OF ROADS





# LOCAL ROADS CONDITIONS - SITUATION

YESTERDAY



TODAY



BRACE YOURSELF

**WINTER IS  
COMING**



## Ta zima niszczy drogi i budżet!

Alicja Bogiel 20 stycznia 2010 AKTUALIZACJA: 20 stycznia 2010 13:46

- Odsnieżanie przez sezon jednego kilometra drogi kosztuje zielonych - mówi Piotr Tykwiński, szef Biura Zarządzania Drogi. Nie o takiej jak obecna...



Piotr Tykwiński, szef Biura Zarządzania Drogi

- Ma pan prognozy pogody?  
- Korzystamy z wielu prognozy, analizujemy informacje z serwerów, analizujemy informacje z Gospodarki Wodnej.

- Zima szykuje nam?  
- Prognozy są optymistyczne, jeszcze bardzo niskie temperatury, temperatury odwilży, temperatury informacji meteo. Na szczęście.

- Ile śniegu ma?  
- Były dwa do siedmiu centymetrów śniegu, warunki przy odśnieżeniu.

## Zima dziurawi nasze drogi

Hanna Walencykowska 4 stycznia 2011 AKTUALIZACJA: 16 grudnia 2013 13:03



W bydgoskich ulicach przybywa dziur. Jak sygnalizują kierowcy, najbardziej niebezpieczne są drogi w centrum miasta: Królowej Jadwigi, Warszawskiej, Unii Lubelskiej, Ossolińskich, Hetmańska...

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**He unleashes his lightning beneath the  
whole heaven and sends it to the ends of  
the earth.**

**(Job 37:3)**



# **3 MAIN PROBLEMS OF LOCAL ROAD ADMINISTRATION**



**LACK OF MONEY**



**LACK OF QUALIFIED  
PERSONEL**



**LACK OF TECHNICAL  
REGULATIONS/ STANDARDS**



**„MAKE IT BLACK PLEASE”**





**MAKE ROADS  
BLACK AGAIN**





\*\*\*\*\*

**MAKE ROADS  
BLACK AGAIN**

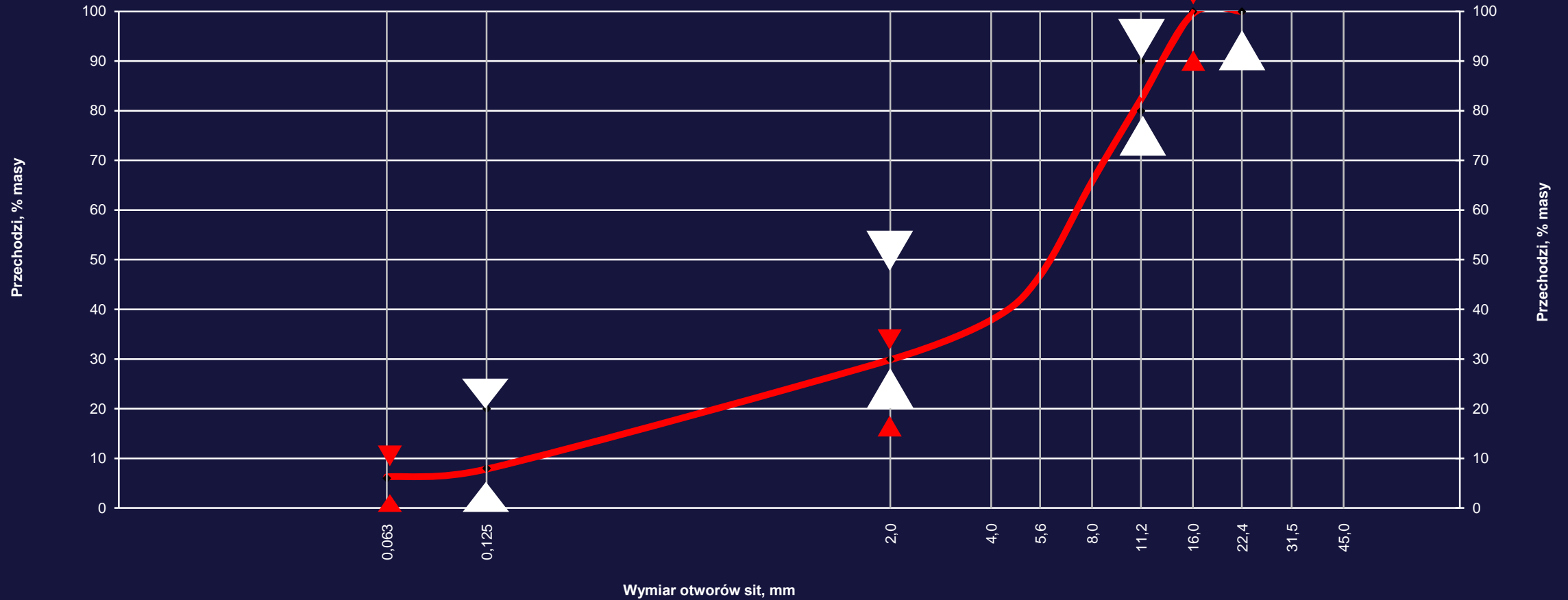
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# DEMAND ON TECHNOLOGIES FOR THE HARD TIMES



# AC 16 TD vs. SMA 16 (TL ASPHALT StB 07)

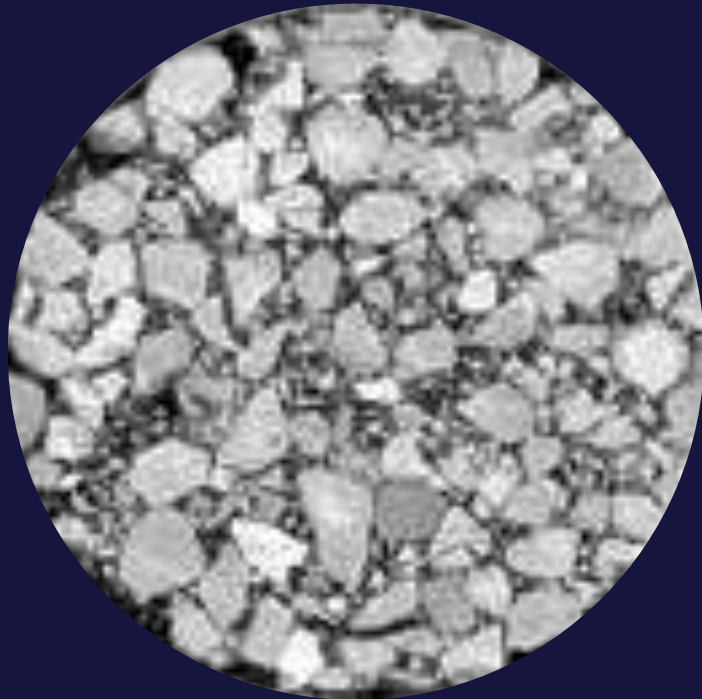


— Curve AC 16 TD

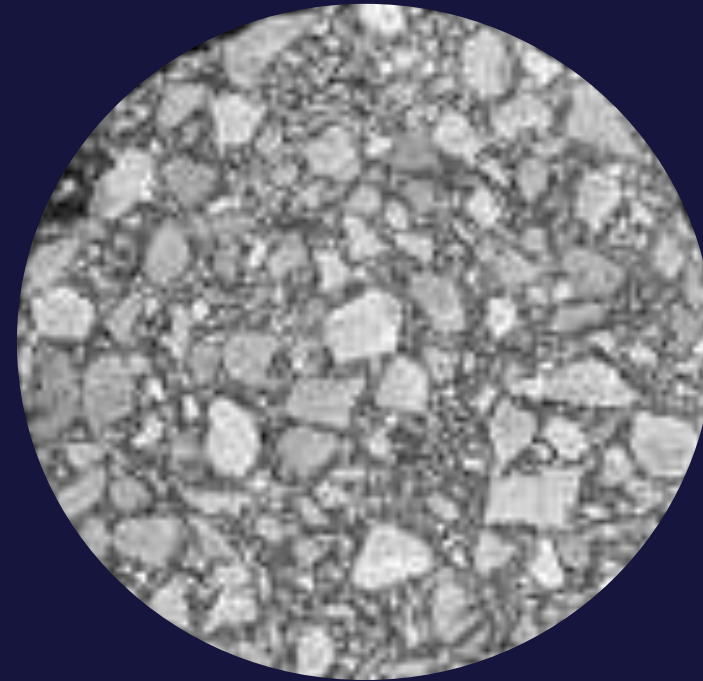
▲ In acc. EN 13108-5 SMA 16

▼ In acc. TL Asphalt StB 07 AC 16 TD

# FEATURES OF AC 16 TD / SMA 16 DTS



SMA 16

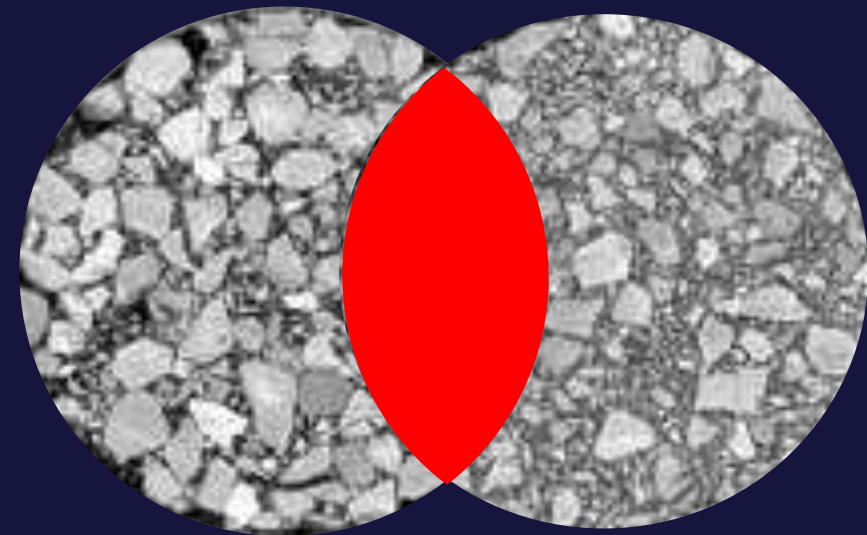


AC 16 TD

# FEATURES OF AC 16 TD / SMA 16 DTS



- GRADING FITS TO BOTH AC 16 TD AND SMA 16
- USE OF RECLAIMED ASPHALT
- USE USUAL BINDER  
– NO PMB NECESSARY
- PLACING OF ONE LAYER  
IN THICKNESS UPTO 10 CM
- USE OF STABILISING AGENT  
– IN CASE OF AC 16 TD AS  
IMPROVEMENT (FIBRES)



SMA 16

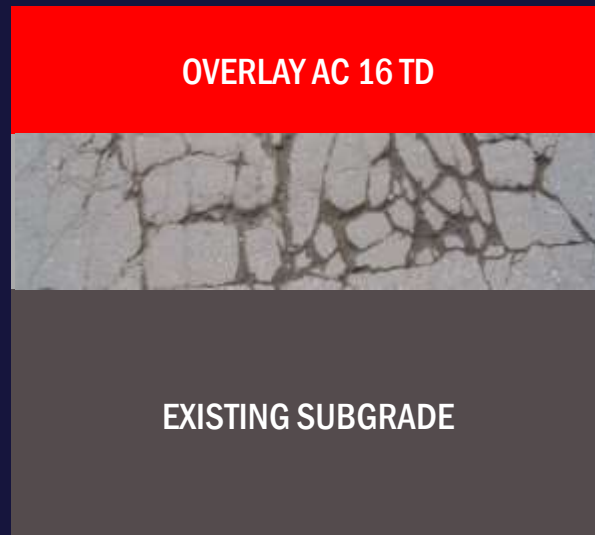
AC 16 TD

# PROPOSED AND APLLIED SOLUTION

## AC 16 TD



**DECISTION MADE IN ONE MINUTE !**



„One-layer pavement” of AC 16 TD in thickness of 6 to 7 cm applying:

- Mastic stabilizer - 0,4 %, in order to improve stability due heavy traffic presence, aimed to achieve rut resistance on level PRDAIR  $\leq$  8%.
- Reclaimed asphalt 13 %, in order to reduce costs. Further: only patching was executed. No profiling layer as no high demand on eveness.
- No PMB required

# CONTROL TEST RESULTS G-AC 16 TD

## APPLICATION IN PRUSZKÓW 2013

| CHARACTERISTIC                                | STANDARD            | RESULT |
|---|---------------------|--------|
| Soluble binder content, % by volume           | PN-EN 12697-1       | 4,8    |
| Void content, $V_m$ , % by volume             | PN-EN 12697-8       | 2,9    |
| Voids filled with binder VFB, % by volume     | PN-EN 12697-8       | 79,7   |
| Voids in mineral aggregate VMA, % by volume   | PN-EN 12697-8       | 14,2   |
| Compaction index, %                           | PN-EN 13108-20, C.4 | 98,2   |
| Void content in layer, %                      | PN-EN 12697-8       | 4,7    |
| Rutting speed $WTS_{AIR}$ , mm/ $10^3$ cycles | PN-EN 12697-22      | 0,18   |
| Propotional rut depth $PRD_{AIR}$ , %         | PN-EN 12697-22      | 6,3    |

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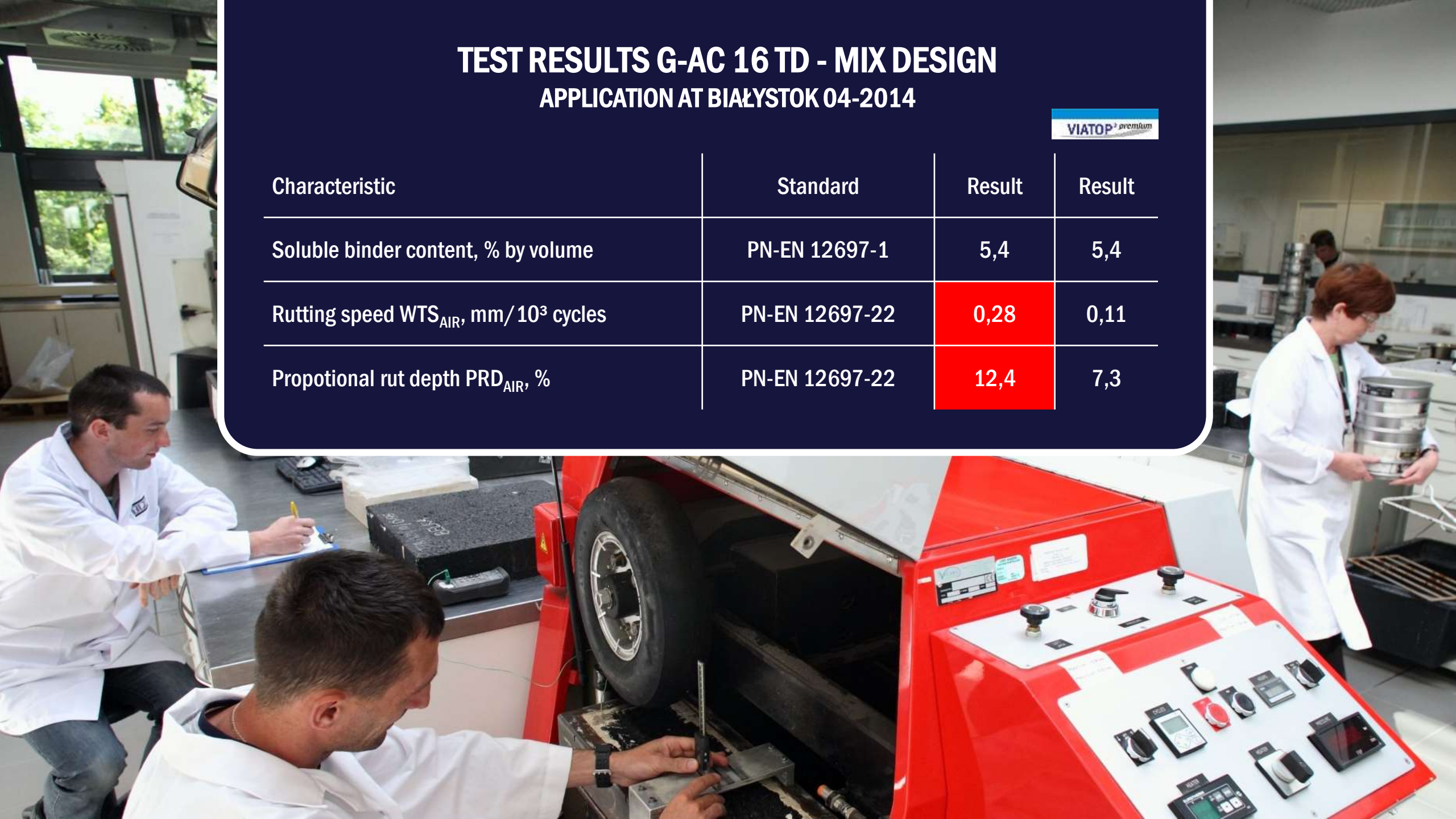


# TEST RESULTS G-AC 16 TD - MIX DESIGN

## APPLICATION AT BIAŁYSTOK 04-2014

VIATOP<sup>2</sup> premium

| Characteristic   | Standard       | Result | Result |
|--|----------------|--------|--------|
| Soluble binder content, % by volume                          | PN-EN 12697-1  | 5,4    | 5,4    |
| Rutting speed WTS <sub>AIR</sub> , mm/10 <sup>3</sup> cycles | PN-EN 12697-22 | 0,28   | 0,11   |
| Propotional rut depth PRD <sub>AIR</sub> , %                 | PN-EN 12697-22 | 12,4   | 7,3    |

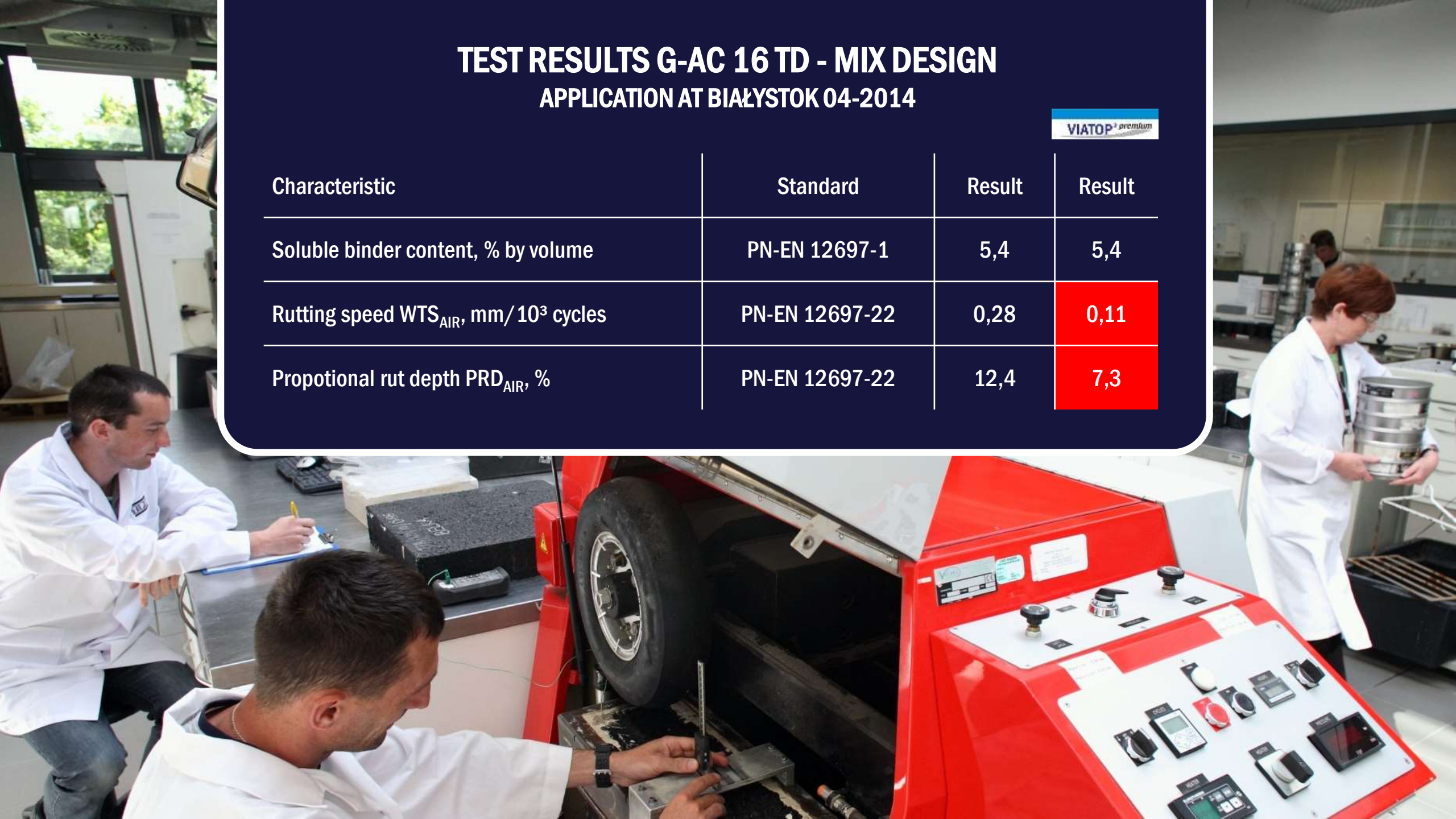


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# UNDER CONSTRUCTION



# UNDER CONSTRUCTION





**AFTER 4 DAYS**



**AFTER 4 DAYS**



**AFTER 40 DAYS**



**AFTER 40 DAYS**



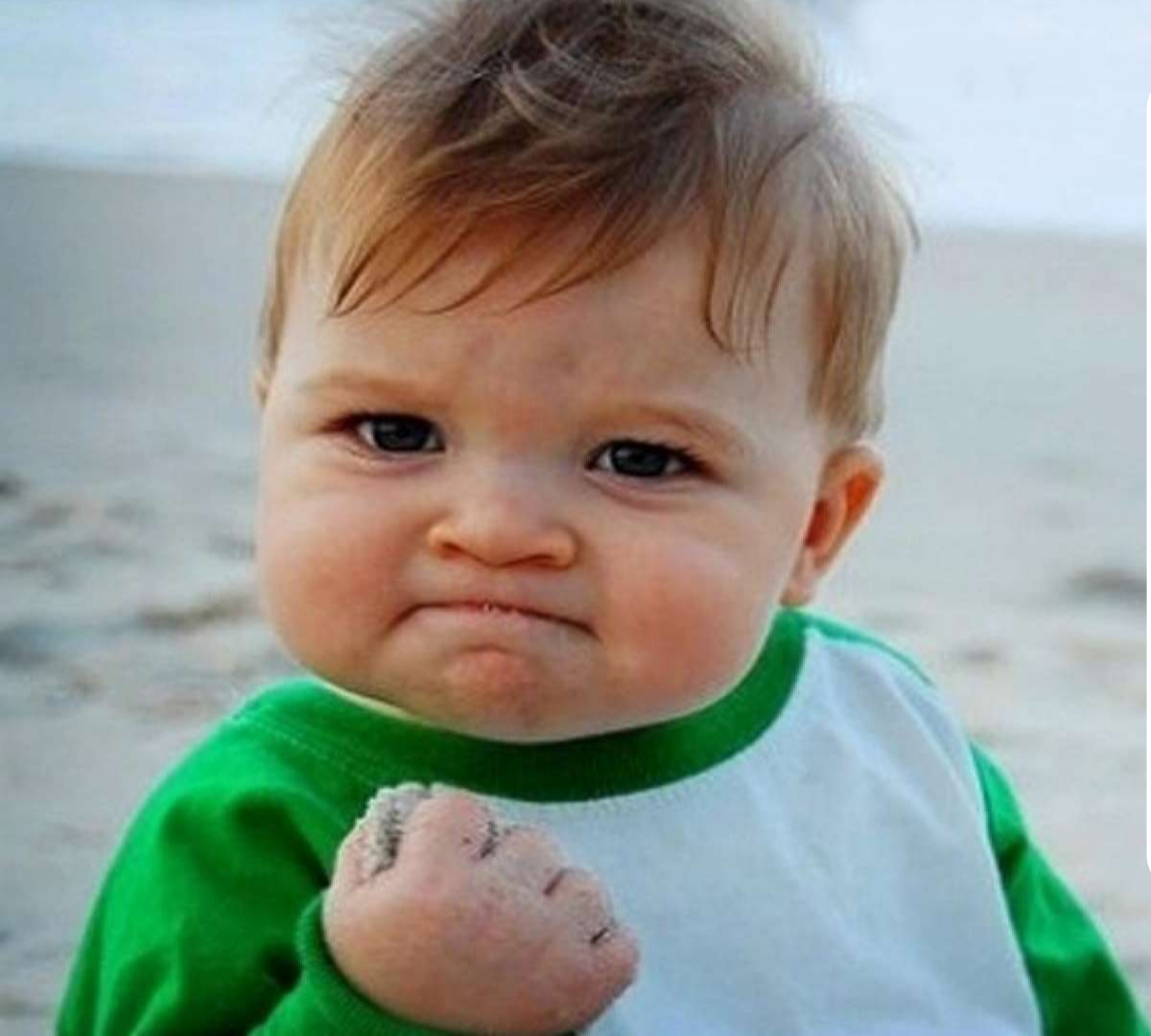


**AFTER 4 YEARS**

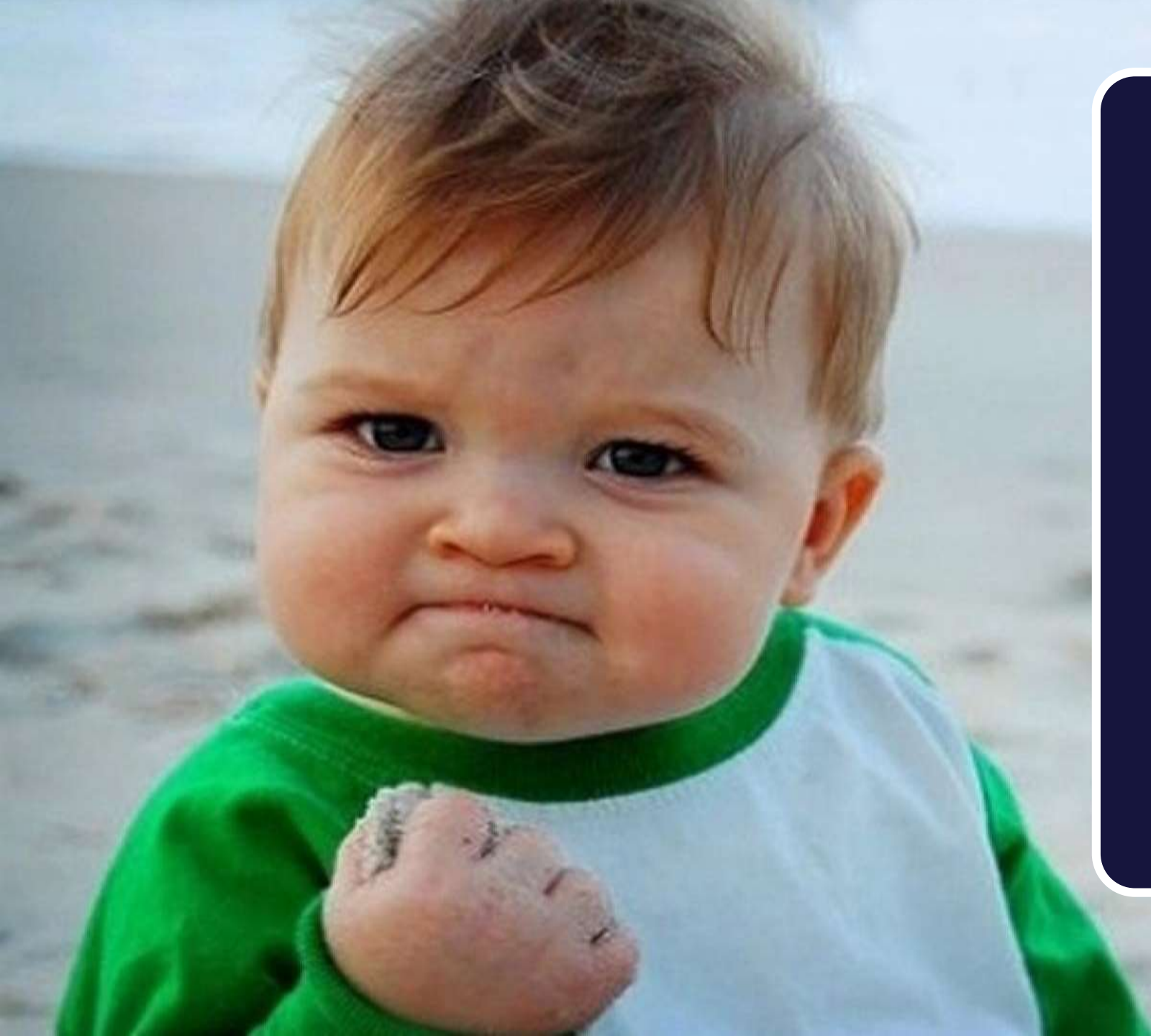


**AFTER 4 YEARS**





**THE CLIENT  
IS HAPPY!  
=  
SUCCESS!**



**SINCE  
2013**

**10 000 KM  
WERE BUILT**

**SUCCESS IS A CHALLENGE – SO GET READY!**

**JP**

**...AND NEVER  
GIVE UP!**





# MAKE ROADS GREAT AGAIN



Dr. Igor RUTTMAR  
CEO TPA Sp. z o.o.

[igor.ruttmar@tpaqi.com](mailto:igor.ruttmar@tpaqi.com)  
[www.tpaqi.com](http://www.tpaqi.com)

# NEW ZEALAND 2016



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# NEW ZEALAND 2016



# NEW ZEALAND 2016



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# NEW ZEALAND 2016

**VERY THIN  
ASPHALT**

# THICKNESS VS LIFETIME

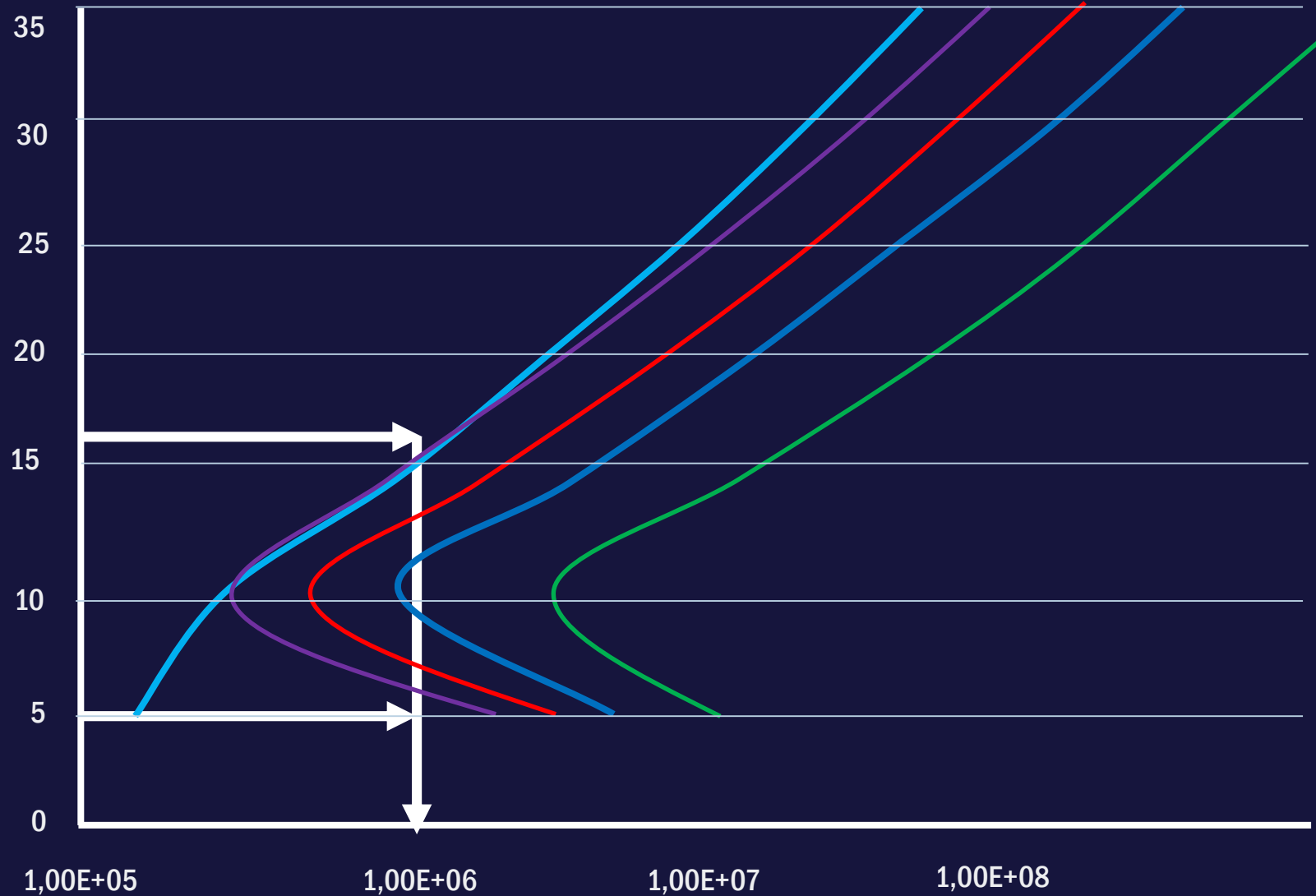
IA

AASHTO

FC = 5%

FC = 10%

FC = 20%





**MAKE ROADS  
GREAT AGAIN**





★★★★★

# **PRESIDENT OF TPA**

A SUCCES STORY FROM POLAND  
06.04.2017  
Dr. Igor RUTTMAR



★★★★★

# PRESIDENT OF TPA

A SUCCESS STORY FROM POLAND  
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