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# Hankook Tire Specifications

## **2019 FORMULA PRO USA F4 & F3 Presented by EXCLUSIVE MOTORWORKS RACING**

Hankook has been a proud partner of Formula 3 and Formula 4 across the globe for many years, and you may already know us from FIA F3 or British F4. We are very excited to add Formula Pro USA F4 & F3 Presented by Exclusive MotorWorks Racing on the West Coast as our partners for the coming years. We believe in devoting resources to developing young drivers and hope that this platform will provide the skills you need to be well on your way to F1 superstardom!

Enclosed you will find information regarding the Hankook brand, tire technical data, tire pricing, ordering, and trackside fitting process. Should you have any technical questions, please contact Danny van Dongen at 305-809-0356 or email him at danny@hankookmotorsports.com.



### **Statement of Confidentiality**

This proposal and supporting materials contain confidential and proprietary business information of Hankook Motorsports. These materials may be printed or photocopied for use in evaluating the proposed project, but are not to be shared with other parties.

# Hankook Tire is committed to the future of motorsports

*Hankook Tire encourages all drivers around the world to pursue their passion by sponsoring competitions and racing teams. In motorsports, where limits are pushed and overcome and true potential is realized, our technological know-how is fully demonstrated.*

By sponsoring a wide range of motorsports competitions and teams at home and abroad, Hankook Tire is inspiring drivers worldwide to overcome the challenges posed by speed and to take on new possibilities. Through Hankook Tire's innovative technology, drivers around the world can enjoy achieving new goals and setting new records. Hankook Tire is raising the bar of motorsports for a passionate driving culture for those who are thrilled about the world of motorsports competition.

**Take a look at some of our current sponsored race series to see how Hankook supports motorsports around the globe.**



“ *Hankook is Driving Emotion* ”



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## Vision for 2020

Hankook Tire has grown to be the fifth largest in tire production capacity and seventh in sales internationally. We have 7 production sites, 30 sales branches and 5 R&D centers around the world. This is a result of Hankook Tire's spirit of challenge, commitment, and hard work. Without breaking stride, our vision is to lead the world's driving industry, and become a major global player by providing our customers value and pleasure.

## What we do

We strive to be the best at what we do

- ▶ Production Capacity : 104 million units in 2017

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- ▶ Local offices in 30 countries, 5 R&D centers located in Korea, USA, Germany, China and Japan

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- ▶ 8 production facilities in Korea (2), China (3), USA, Hungary and Indonesia

# Hankook in F3 and F4



## Formula 3

*The FIA Formula 3 European Championship is a gateway to becoming an international F1 driver and talented young race car drivers from all over the world are realizing their dream to be among the world's best with Hankook Tire.*

Hankook Tire has actively sponsored talented up-and-coming drivers as an official corporate sponsor of FIA Formula 3 since 2012 and the British and Australian F4 series since 2015.



Specially designed single-seater slicks and wets

### ► Ventus F200 (Dry)

#### ► Circuit / Slick

Top-notch performance tire with high mileage and consistency on a dry surface. Radial Construction. Directional tires.

As a dry tire, the F200 is a high-tech slick tire which has excellent grip ability and continuous performance even in the limit of high speed driving.

### ► Ventus Z207 (Wet)

#### ► Circuit / Wet

Extremely reliable circuit tire to be used exclusively on wet surfaces

As a wet tire, the Z207 prevents hydroplaning whilst maintaining excellent controlling stability and the best drainage performance.



# F3 Tire Data and Spring Rates (dry only)

| Hankook F3ES Tire technical data        |      |                    |                    |
|---|------|--------------------|--------------------|
| F200 - SLICK TIRE                       |      |                    |                    |
| Tire Size                               |      | 230/560R13<br>F200 | 280/580R13<br>F200 |
| Permitted Rim                           |      | 9.5"~10.5"         | 11.5"~12.5"        |
| Optimum Rim (Measuring)                 |      | 8.5"               | 10.5"              |
| Tread Width (mm)                        |      | 230                | 280                |
| Section Width (mm)                      |      | 282                | 335                |
| Overall Diameter (mm)                   |      | 551                | 572                |
| Overall Circumference (mm)              |      | 1731               | 1797               |
| Revolutions/km                          |      | 599.3              | 577.3              |
| Recommended Inflation<br>Pressure (bar) | Cold | 1.1~1.2            | 1.1~1.2            |
|   | Hot  | 1.5~1.6            | 1.5~1.6            |
| Recommended Camber                      |      | -2.5~3.5           | -2.0~2.5           |
| Recommended Toe                         |      | 20' OUT            | 10' IN             |

| <u>F3 America Tire Technical Data (Dry Tire)</u> |                       |            |      |
|--|-----------------------|------------|------|
| Static Spring Rates                              |                       |            |      |
| 25-10-2018                                       |                       |            |      |
| Size   | 230/560R13            | 280/580R13 |      |
| Tread Pattern                                    | F200                  | F200       |      |
| Specification                                    | C72                   | C72        |      |
| Sidewall Decal Color                             | --                    | --         |      |
| Rim Size (Inch)                                  | 10.0JX13              | 12.0JX13   |      |
| Inflation Pressure (kgf/cm <sup>2</sup> )        | 1.5                   | 1.5        |      |
| Vertical load (kgf)                              | Spring rates (kgf/mm) |            |      |
| 100  | Vertical              | 20.6       | 22.8 |
|  | Lateral               | 13.9       | 14.4 |
|  | Torsional             | 17.3       | 20.6 |
| 200  | Vertical              | 20.0       | 22.7 |
|  | Lateral               | 16.0       | 16.3 |
|  | Torsional             | 26.0       | 25.7 |
| 300  | Vertical              | 19.7       | 21.8 |
|  | Lateral               | 16.2       | 16.6 |
|  | Torsional             | 27.6       | 26.5 |

# F4 Tire Data and Spring Rates

## F4 Tire Technical Data (Dry Tire)

### Static Spring Rates

| Size                                      |                       | 180/550R13 | 240/570R13 |
|---|-----------------------|------------|------------|
| Tread Pattern                             |                       | F200       | F200       |
| Specification                             |                       | F4(C92)    | F4(C92)    |
| Sidewall Decal Color                      |                       | --         | --         |
| Rim Size (Inch)                           |                       | 8.5JX13    | 10.5JX13   |
| Inflation Pressure (kgf/cm <sup>2</sup> ) |                       | 1.5        | 1.5        |
| Vertical load (kgf)                       | Spring rates (kgf/mm) |            |            |
| 150                                       | Vertical              | 19.2       | 21.3       |
|   | Lateral               | 13.7       | 13.2       |
|   | Torsional             | 323.0      | 282.4      |
| 180                                       | Vertical              | 19.6       | 20.4       |
|   | Lateral               | --         | --         |
| 210                                       | Vertical              | 19.6       | 20.8       |
|   | Lateral               | --         | --         |
| 240                                       | Vertical              | 20.0       | 21.3       |
|   | Lateral               | --         | --         |

## F4 Tire Technical Data (Wet Tire)

### Static Spring Rates

| Size                                      |                       | 180/550R13 | 240/570R13 |
|---|-----------------------|------------|------------|
| Tread Pattern                             |                       | Z206       | Z207       |
| Specification                             |                       | F4         | F4         |
| Sidewall Decal Color                      |                       | --         | --         |
| Rim Size (Inch)                           |                       | 8.5JX13    | 10.5JX13   |
| Inflation Pressure (kgf/cm <sup>2</sup> ) |                       | 1.5        | 1.5        |
| Vertical load (kgf)                       | Spring rates (kgf/mm) |            |            |
| 150                                       | Vertical              | 16.7       | 18.2       |
|   | Lateral               | 10.7       | 11.1       |
|   | Torsional             | 205.5      | 259.8      |
| 180                                       | Vertical              | 17.0       | 18.9       |
|   | Lateral               | --         | --         |
| 210                                       | Vertical              | 17.9       | 18.5       |
|   | Lateral               | --         | --         |
| 240                                       | Vertical              |            |            |
|   | Lateral               |            |            |

## F4 Tire Technical Data (Dry Tire)

### Dimension

| Size                                      | 180/550R13 | 240/570R13  |
|---|------------|-------------|
| Tread Pattern                             | F200       | F200        |
| Specification                             | F4(C92)    | F4(C92)     |
| Sidewall Decal Color                      | --         | --          |
| Rim Size (Inch)                           | 8.5JX13    | 10.5JX13    |
| Recommended (Rim Width)                   | 8.0 - 9.0  | 10.0 - 11.0 |
| Inflation Pressure (kgf/cm <sup>2</sup> ) | 1.5        | 1.5         |
| Overall Diameter                          | 551mm      | 574mm       |
| Section Width                             | 241mm      | 290mm       |
| Tread Width                               | 200mm      | 250mm       |

## F4 Tire Technical Data (Wet Tire)

### Dimension

| Size                                      | 180/550R13 | 240/570R13  |
|---|------------|-------------|
| Tread Pattern                             | Z206       | Z207        |
| Specification                             | F4         | F4          |
| Sidewall Decal Color                      | --         | --          |
| Rim Size (Inch)                           | 8.5JX13    | 10.5JX13    |
| Recommended (Rim Width)                   | 8.0 - 9.0  | 10.0 - 11.0 |
| Inflation Pressure (kgf/cm <sup>2</sup> ) | 1.5        | 1.5         |
| Overall Diameter                          | 552mm      | 575mm       |
| Section Width                             | 239mm      | 295mm       |
| Tread Width                               | 200mm      | 250mm       |

## Pricing and Ordering

| Category | Tire Size  | Model     | Price |
|----------|------------|-----------|-------|
| F3       | 230/560R13 | Slick/Wet | \$280 |
| F3       | 280/580R13 | Slick/Wet | \$320 |
| F4       | 180/550R13 | Slick/Wet | \$260 |
| F4       | 240/570R13 | Slick/Wet | \$290 |



### Order Details

1. All prices are exclusive of tax and shipping.
2. If you provide a sales tax resale certificate, no sales tax will be applied.
3. Orders can be placed by sending an email with: Team Name, Contact Person, Shipping Address, Phone Number and Billing Address to f3f4@hankookmotorsports.com or by phone at 800-287-5013.
4. When ordering from Hankook Motorsports directly, you must specify participation in Formula Pro West Coast.
5. You may also pre-order tires from Exclusive Motorworks for trackside delivery at a race or official test event.
6. Unless otherwise specified, payment is due in full prior to shipment.
7. Please allow 4-5 business days at minimum for delivery.
8. We ship via UPS and use both ground and freight services.
9. You can make arrangements to pick tires up from our facility in Austin, TX free of charge.
10. We accept credit cards, cash, checks, bank transfer (echeck), wire transfer and PayPal.
11. We can keep your credit card on file for future invoices.



## Tire Photos

