



# *Strength Testing Results*

March 2025



INNOLUXE

## Project aims

Tensile strength test for hair bleached with different bond-builders. The aim was to precisely measure the strength of hair after bleaching, comparing bleach without a bond builder to hair bleached with different bond-builders. We regularly receive feedback from hairdressers that INNOLUXE V3 delivers superior results, so we wanted to test to prove it.

## Preparation of swatches

Six swatches were bleached twice. Pravana Granula bleach without bonder was used for all swatches except the L'oreal Studio 9 bleach with bonder inside. 20 vol/6% hydrogen peroxide was used for all samples, using each bleach's recommended measurements. The hair was washed and gently dried between the 2 bleach sessions. Each sample was measured after the 'step 1' for each brand of bonder, after shampooing for sample 1 and before shampooing for Olaplex and then measured again after step 2 or conditioner for samples 1 and 2. The brand's recommended timings were used for each sample..

## Tests

- Pravana bleach with no bond-builder
- L'oreal Studio 9 bleach with bonder inside
- Pravana bleach with Olaplex
- Pravana Bleach with K18
- Pravana Bleach with Innoluxe V3
- Pravana Bleach with Innoluxe V3 - prepared with Innoluxe FBR

## Testing method

The strength of single hairs was measured using a Sauter FH 500 Force Gauge on a Sauter TVL Manual Crank Handle Stand and Sauter AC 14 Screw Clamps.

Each hair was placed in 2 clamps 5 centimetres apart, and the gauge was reset to zero. The crank was then slowly turned to stretch the hair until it broke, and a result in newtons was recorded.

The newton (symbol: N) is the unit of force required to accelerate a one-kilogram mass at a rate of one meter per second squared.

For each sample, multiple hairs were measured (individually) and the three most similar results were recorded. As hair is a biological substance individual hairs vary greatly, so outlier results that were not similar to the majority were not accepted.

The tests were conducted by Innoluxe founder Jez Barnett and Sarah Spiers from Chaulk Education.



## Table of results

	Wet stage 1				Wet stage 2			
	Test 1	Test 2	Test 3	Average	Test 1	Test 2	Test 3	Average
1. Pravana Bleach - without	16.56	12.16	15.80	14.84	20.52	12.22	17.20	16.65
2. Studio 9 Bonder inside bleach	17.05	15.58	12.92	15.18	17.49	22.04	19.36	19.63
3. Olaplex	19.75	16.84	15.00	17.20	21.82	19.68	22.96	21.49
4. K18	18.02	18.19	17.28	17.83	21.41	21.43	22.05	21.63
5. INNOLuxe V3	19.71	19.50	20.28	19.83	27.96	27.26	24.21	26.48
6. INNOLuxe V3 + FBR	24.99	22.36	22.32	23.22	27.98	27.11	27.61	27.57

**Wet stage 1** - after the colour was shampooed off (rinsed off in the case of Olaplex)

**Wet stage 2** - after the conditioner/treatment/mask was applied, left on for the recommended time and rinsed, shampooed or left on as per instructions.

## Results

Samples 2-6 compared to sample 1 Pravana Bleach (no bond-builder). Each achieved greater strength than the bleach without bond-builder.

	Wet stage 1		Wet stage 2	
	Average	% better than without Bondbuilder	Average	% better than without Bondbuilder
1. Pravana Bleach - without	14.84		16.65	
2. Studio 9 Bonder inside bleach	15.18	2.31%	19.63	17.92%
3. Olaplex	17.20	15.88%	21.49	29.07%
4. K18	17.83	20.15%	21.63	29.94%
5. INNOLuxe V3	19.83	33.63%	26.48	59.05%
6. INNOLuxe V3 + FBR	23.22	56.49%	27.57	65.60%

**FBR** - Innoluxe's unique pre-colour spray



@innoluxe

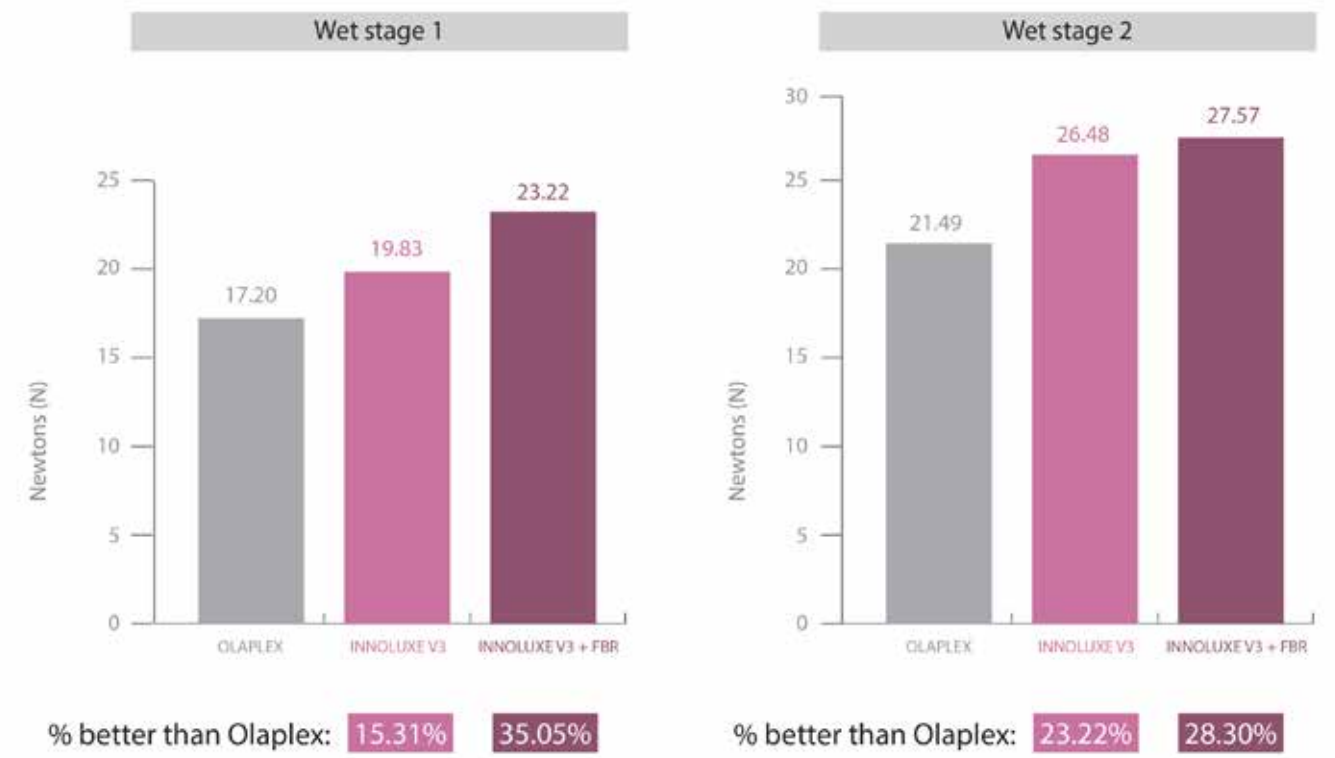


@innoluxeuk

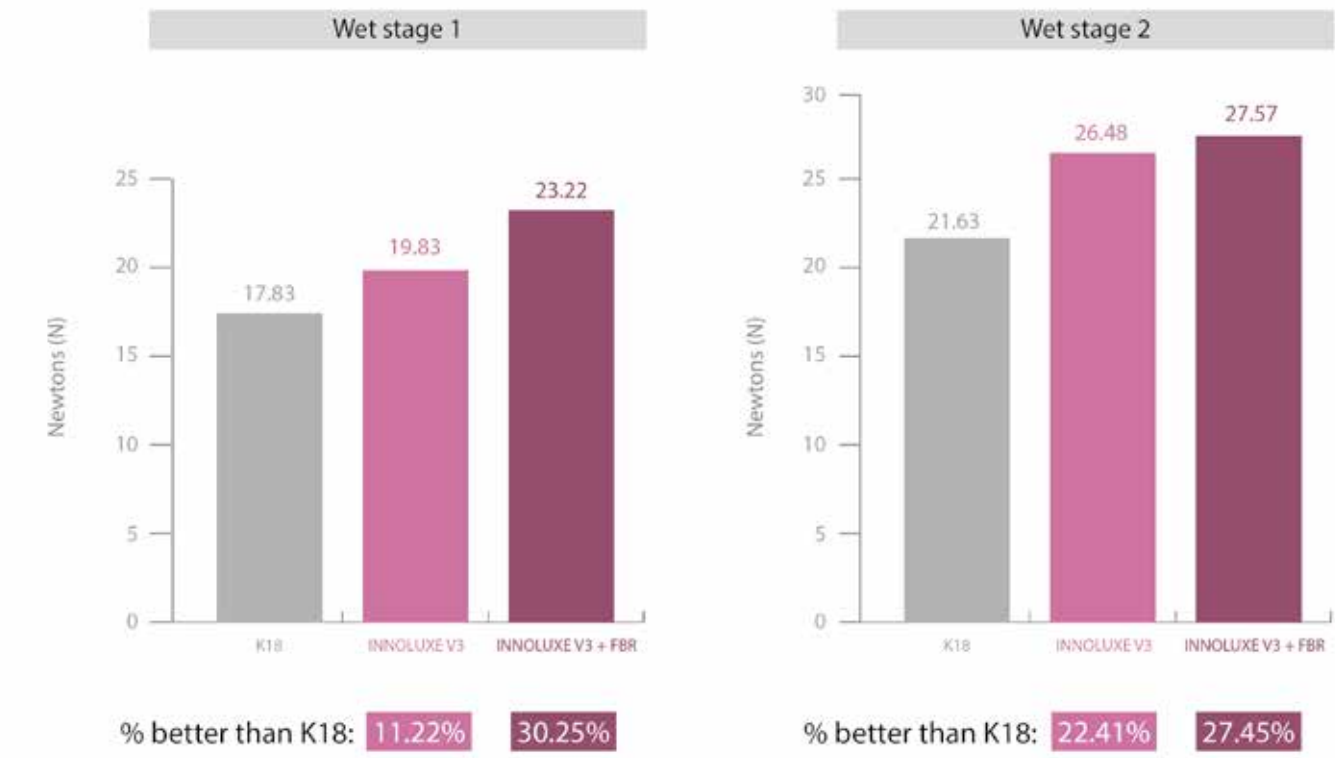
INNOLuxe

# Results

## INNoluxe V3 compared to Olaplex



## INNoluxe V3 compared to K18



**FBR** - Innoluxe’s unique pre-colour spray

## Conclusion

*"I wanted to dig deeper into whether bond builders actually deliver on their promises, and using a stretch testing machine gave valuable insights into what's really happening inside the hair. Hair structure relies on a combination of proteins (amino acids), with sulphur being one of the strongest players. The sulphur side chains are crucial for keeping hair fibres intact, without them hair cannot be healthy.*

*Chemical services, like the ones performed in salons daily, break a percentage of these sulphur bonds. Although it's unavoidable during processes like colouring, this test proves that bond-builders really are game-changers. Essentially, these products flood the cortex during the degradation process, helping retain amino acids in the fibre enabling bonds to be reconnected.*

*In this test the findings were quite apparent with a definite standout product in this category. I believe this comes down to the specific ingredients used in its formulation. The choice of ingredients significantly affects the strength and repair capabilities of the product. And when combined with FBR (Innoluxe's porosity-equalising pre-colour spray), the improvement is notably enhanced. This will undoubtedly give hairdressers more confidence when performing colour services in the future, knowing they have most effective tools to maintain the integrity and health of the hair."*

**Sarah Spiers, Chaulk Education**



@innoluxe



@innoluxeuk

INNoluxe



## Further testing

Further tests were carried out to test the strength of hair bleached without bond builder compared to Olpalex, K18, Innoluxe V3 and Innoluxe V3 prepared with Innoluxe FBR. Pivot Point Dark Brown and Medium Blonde swatches were used. Each swatch was bleached 4 times to maximise the challenge. Recommended timings were observed.

### Tests

- Avec Pro Super Lift Bleach
- Avec Pro Super Lift Bleach + Olaplex
- Avec Pro Super Lift Bleach + K18
- Avec Pro Super Lift Bleach + Innoluxe V3
- Avec Pro Super Lift Bleach + Innoluxe FBR & V3

## Results

### Round 3 Bleaching

#### Dark Brown Swatches

	Wet stage 1		Wet stage 2	
	Average	% better than without Bondbuilder	Average	% better than without Bondbuilder
Avec Pro Super Lift Bleach	24.12		24.33	
2. Olaplex	25.99	7.75%	26.14	7.45%
3. K18	26.27	8.91%	26.53	9.04%
4. INNoluxe V3	28.64	18.72%	29.07	19.48%
5. INNoluxe V3 + FBR	28.86	19.65%	30.74	26.33%

**FBR** - Innoluxe's unique pre-colour spray



@innoluxe



@innoluxeuk

INNoluxe

## Results - Round 3 Bleaching

### Innoluxe V3 v Olaplex

	Wet stage 1		Wet stage 2	
	Average	% better than Olaplex	Average	% better than Olaplex
2. Olaplex	25.99		26.14	
4. INNoluxe V3	28.64	10.18%	29.07	11.19%
5. INNoluxe V3 + FBR	28.86	11.04%	30.74	17.57%

### Innoluxe V3 v K18

	Wet stage 1		Wet stage 2	
	Average	% better than K18	Average	% better than K18
3. K18	26.27		26.53	
4. INNoluxe V3	28.64	9.01%	29.07	9.57%
5. INNoluxe V3 + FBR	28.86	9.86%	30.74	15.86%

**FBR** - Innoluxe's unique pre-colour spray



@innoluxe



@innoluxeuk

INNoluxe

## Results - Round 3 Bleaching

### Blonde Swatches

	Wet stage 1		Wet stage 2	
	Average	% better than without Bondbuilder	Average	% better than without Bondbuilder
Avec Pro Super Lift Bleach	23.34		24.34	
2. Olaplex	26.26	12.48%	27.09	11.28%
3. K18	27.06	15.92%	27.98	14.97%
4. INNOLuxe V3	29.10	24.68%	29.80	22.43%
5. INNOLuxe V3 + FBR	29.94	28.26%	31.01	27.40%

### Innoluxe V3 v Olaplex

	Wet stage 1		Wet stage 2	
	Average	% better than Olaplex	Average	% better than Olaplex
2. Olaplex	26.26		27.09	
4. INNOLuxe V3	29.10	10.84%	29.80	10.02%
5. INNOLuxe V3 + FBR	29.94	14.03%	31.01	14.48%

### Innoluxe V3 v K18

	Wet stage 1		Wet stage 2	
	Average	% better than K18	Average	% better than K18
3. K18	27.06		27.98	
4. INNOLuxe V3	29.10	7.55%	29.80	6.49%
5. INNOLuxe V3 + FBR	29.94	10.64%	31.01	10.82%

**FBR** - Innoluxe's unique pre-colour spray



@innoluxe



@innoluxeuk

INNOLuxe

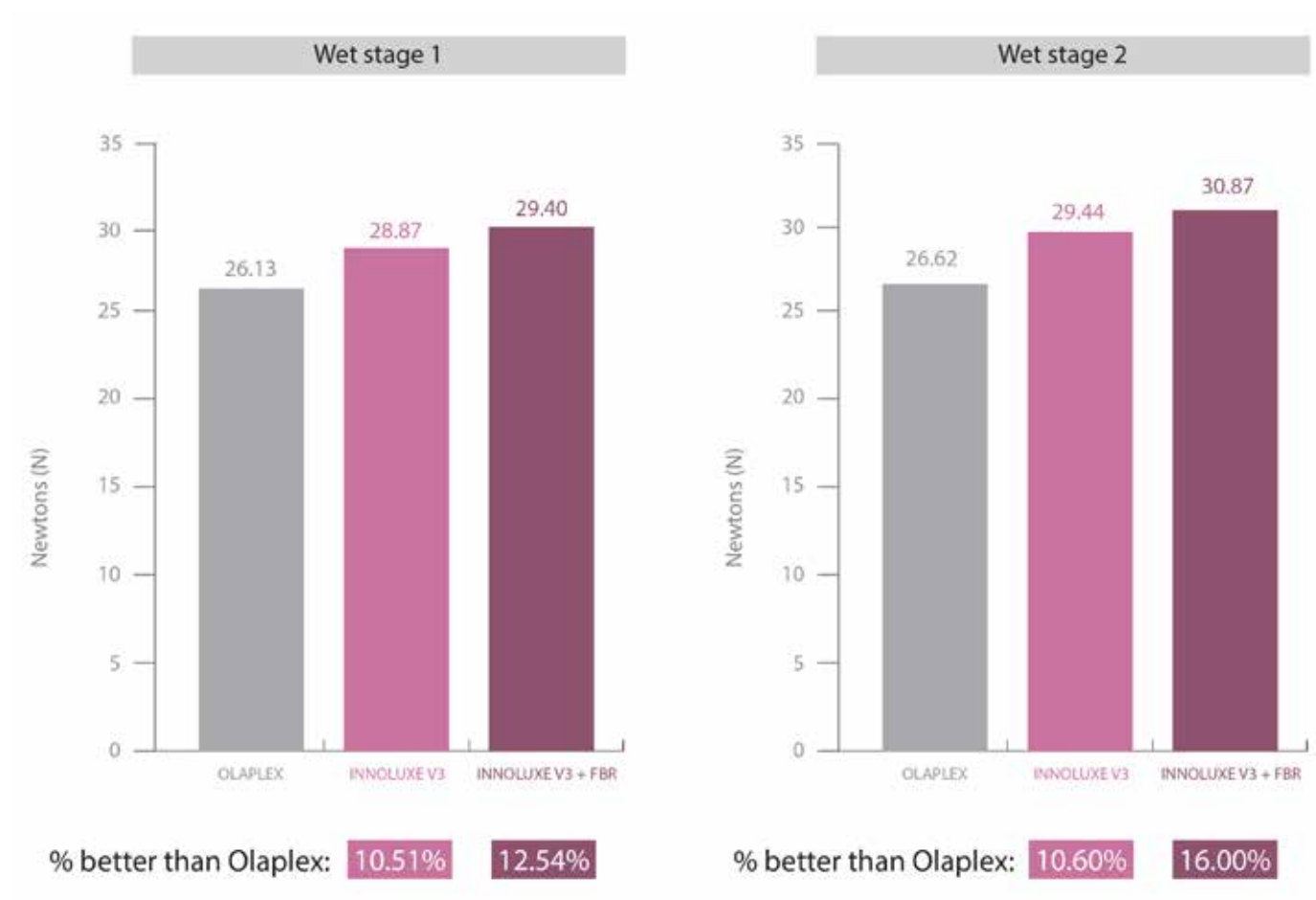


## Results - Round 3 Bleaching

### Combined Light & Dark Swatches

#### Innoluxe V3 v Olaplex

	Wet stage 1		Wet stage 2	
	Average	% better than Olaplex	Average	% better than Olaplex
2. Olaplex	26.13		26.62	
4. INNOLUXE V3	28.87	10.51%	29.44	10.60%
5. INNOLUXE V3 + FBR	29.40	12.54%	30.87	16.00%



**FBR** - Innoluxe's unique pre-colour spray



@innoluxe



@innoluxeuk

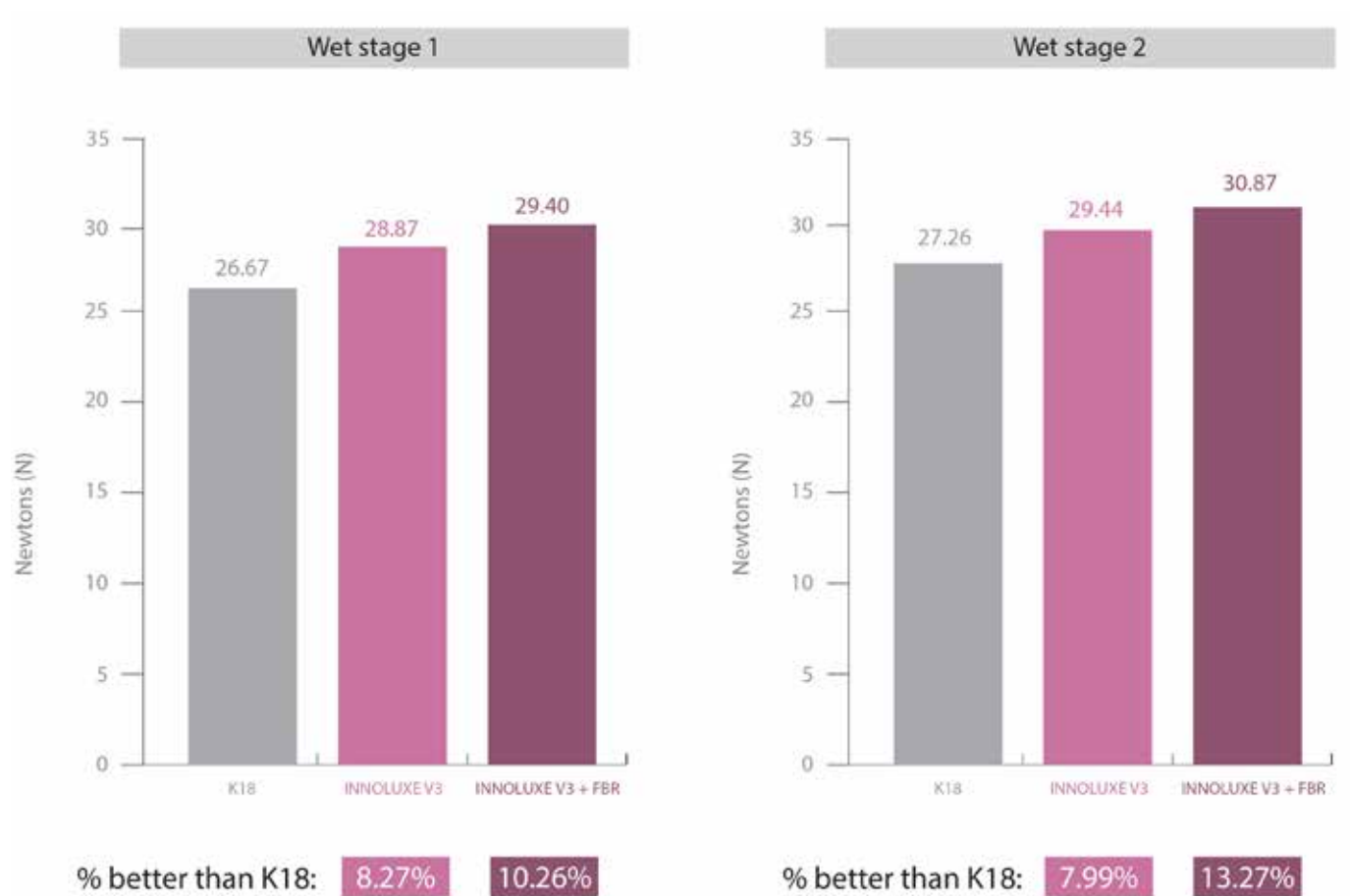
INNOLUXE

## Results - Round 3 Bleaching

### Combined Light & Dark Swatches

#### Innoluxe V3 v K18

	Wet stage 1		Wet stage 2	
	Average	% better than K18	Average	% better than K18
3. K18	26.67		27.26	
4. INNOLuxe V3	28.87	8.27%	29.44	7.99%
5. INNOLuxe V3 + FBR	29.40	10.26%	30.87	13.27%



**FBR** - Innoluxe's unique pre-colour spray



@innoluxe



@innoluxeuk

INNOLuxe

## Results - Round 4 Bleaching

### Dark Brown swatches

	Wet stage 1		Wet stage 2	
	Average	% better than without Bondbuilder	Average	% better than without Bondbuilder
Avec Pro Super Lift Bleach	18.77		20.86	
2. Olaplex	22.37	19.18%	23.13	10.88%
3. K18	22.69	20.87%	24.95	19.61%
4. INNOLuxe V3	25.14	33.94%	26.73	28.18%
5. INNOLuxe V3 + FBR	26.47	41.02%	28.03	34.39%

### Innoluxe V3 v Olaplex

	Wet stage 1		Wet stage 2	
	Average	% better than Olpalex	Average	% better than Olpalex
2. Olaplex	22.37		23.13	
4. INNOLuxe V3	25.14	12.38%	26.73	15.60%
5. INNOLuxe V3 + FBR	26.47	18.33%	28.03	21.20%

### Innoluxe V3 v K18

	Wet stage 1		Wet stage 2	
	Average	% better than K18	Average	% better than K18
3. K18	22.69		24.95	
4. INNOLuxe V3	25.14	10.81%	26.73	7.16%
5. INNOLuxe V3 + FBR	26.47	16.68%	28.03	12.36%

**FBR** - Innoluxe's unique pre-colour spray



@innoluxe



@innoluxeuk

INNOLuxe

## Results - Round 4 Bleaching

### Dark Blonde swatch

	Wet stage 1		Wet stage 2	
	Average	% better than without Bondbuilder	Average	% better than without Bondbuilder
Avec Pro Super Lift Bleach	20.21		20.91	
2. Olaplex	22.17	9.70%	23.70	13.33%
3. K18	22.79	12.78%	24.84	18.81%
4. INNOLuxe V3	25.73	27.33%	27.61	32.04%
5. INNOLuxe V3 + FBR	27.29	35.04%	28.18	34.77%

### Innoluxe V3 v Olaplex

	Wet stage 1		Wet stage 2	
	Average	% better than Olpalex	Average	% better than Olpalex
2. Olaplex	22.17		23.70	
4. INNOLuxe V3	25.73	16.08%	27.61	16.51%
5. INNOLuxe V3 + FBR	27.29	23.10%	28.18	18.92%

### Innoluxe V3 v K18

	Wet stage 1		Wet stage 2	
	Average	% better than K18	Average	% better than K18
3. K18	22.79		24.84	
4. INNOLuxe V3	25.73	12.90%	27.61	11.14%
5. INNOLuxe V3 + FBR	27.29	19.73%	28.18	13.43%

**FBR** - Innoluxe's unique pre-colour spray



@innoluxe



@innoluxeuk

INNOLuxe

## Results - Round 4 Bleaching

### Combined Light & Dark Swatches

#### Innoluxe V3 v Olaplex

	Wet stage 1		Wet stage 2	
	Average	% better than Olpalex	Average	% better than Olpalex
2. Olaplex	22.27		23.41	
4. INNoluxe V3	25.44	14.22%	27.17	13.84%
5. INNoluxe V3 + FBR	26.88	20.70%	28.11	20.05%

#### Innoluxe V3 v K18

	Wet stage 1		Wet stage 2	
	Average	% better than K18	Average	% better than K18
3. K18	22.74		24.90	
4. INNoluxe V3	25.44	11.86%	27.17	9.15%
5. INNoluxe V3 + FBR	26.88	18.21%	28.11	12.89%

**FBR** - Innoluxe's unique pre-colour spray



@innoluxe



@innoluxeuk

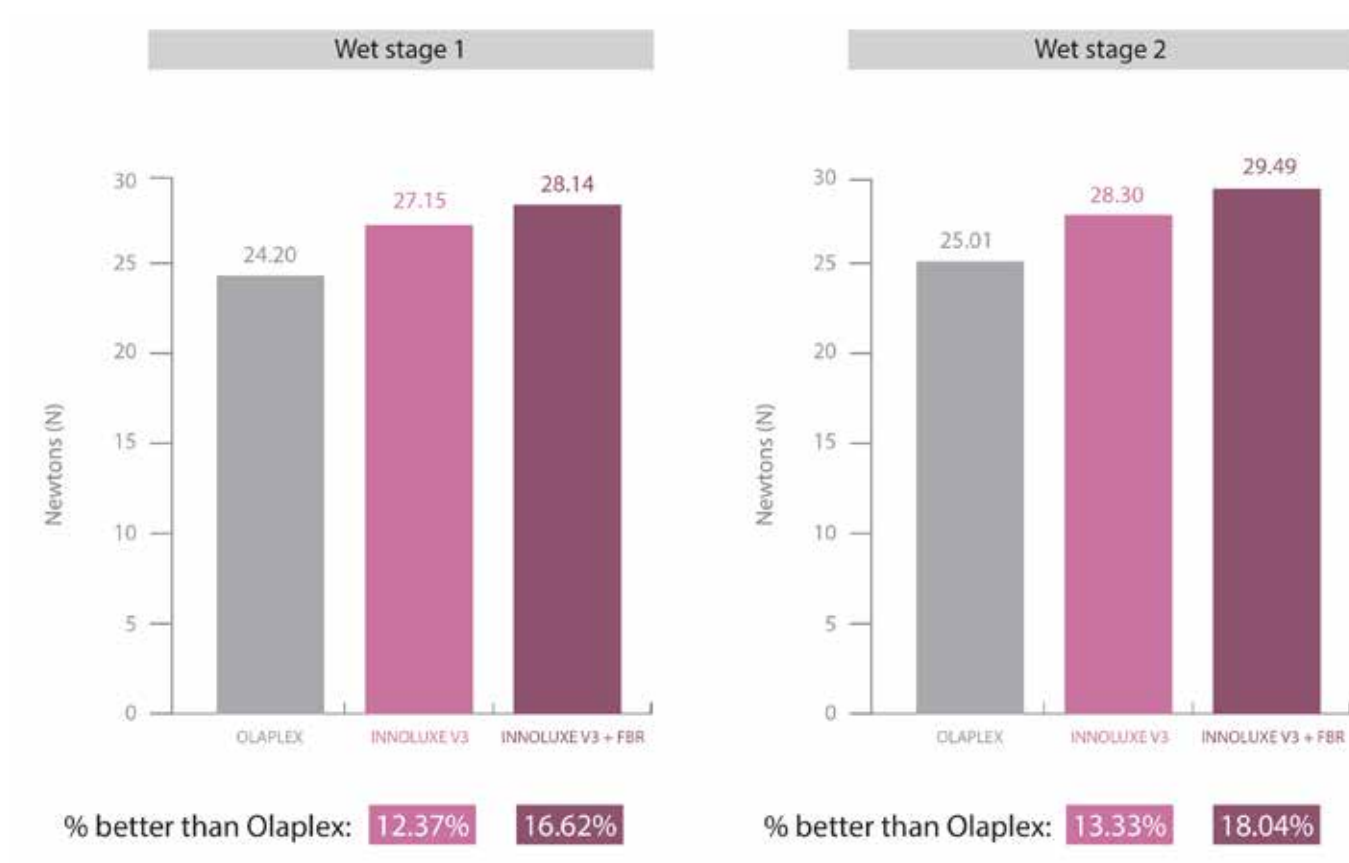
INNoluxe

## Average of results from rounds 3 & 4 Bleaching

### Combined Rounds 3 & 4

### Innoluxe V3 v Olaplex

	Wet stage 1		Wet stage 2	
	Average	% better than Olaplex	Average	% better than Olaplex
2. Olaplex	24.20		25.01	
4. INNOLuxe V3	27.15	12.37%	28.30	13.33%
5. INNOLuxe V3 + FBR	28.14	16.62%	29.49	18.04%



**FBR** - Innoluxe's unique pre-colour spray



@innoluxe



@innoluxeuk

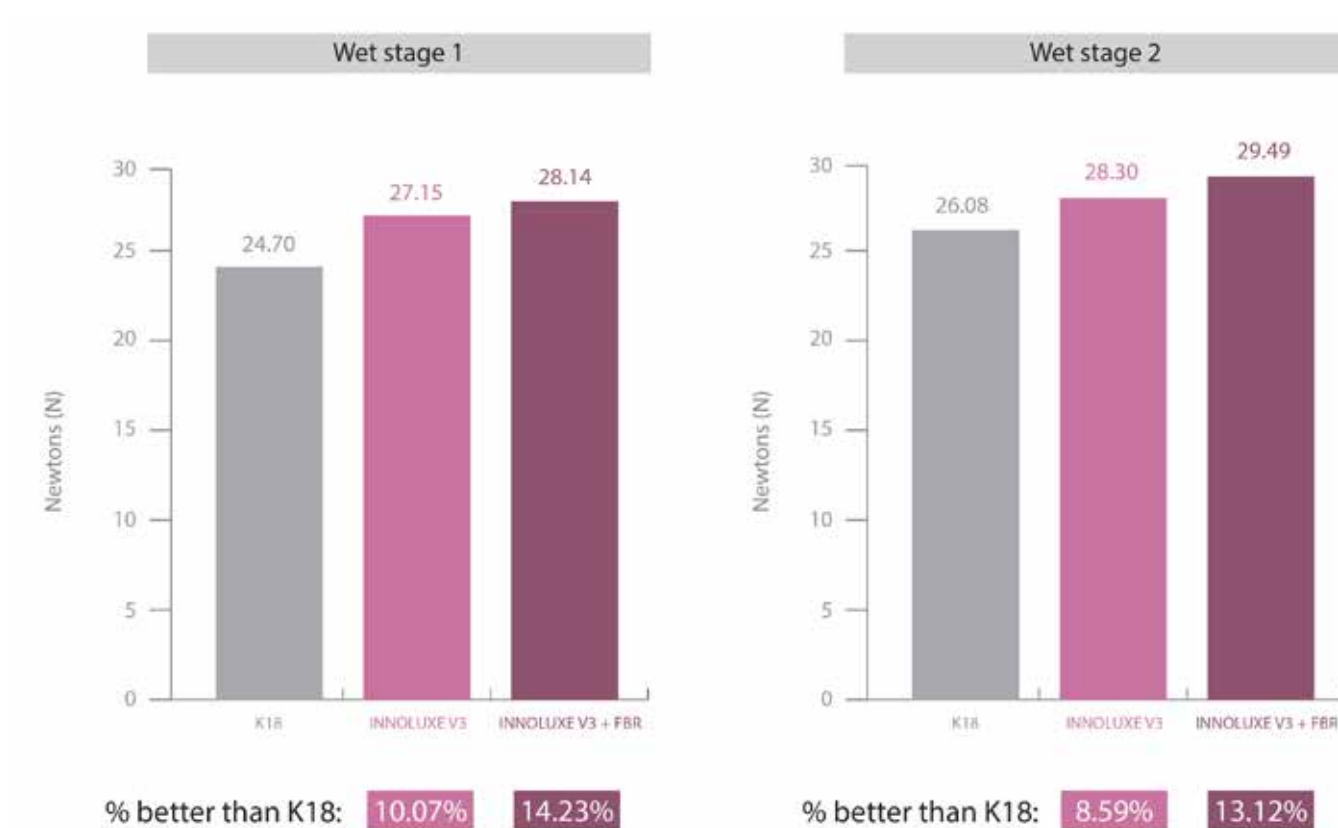
INNOLuxe

## Average of results from rounds 3 & 4 Bleaching

### Combined Rounds 3 & 4

#### Innoluxe V3 v K18

	Wet stage 1		Wet stage 2	
	Average	% better than K18	Average	% better than K18
3. K18	24.70		26.08	
4. INNOLuxe V3	27.15	10.07%	28.30	8.59%
5. INNOLuxe V3 + FBR	28.14	14.23%	29.49	13.12%



**FBR** - Innoluxe's unique pre-colour spray



@innoluxe



@innoluxeuk

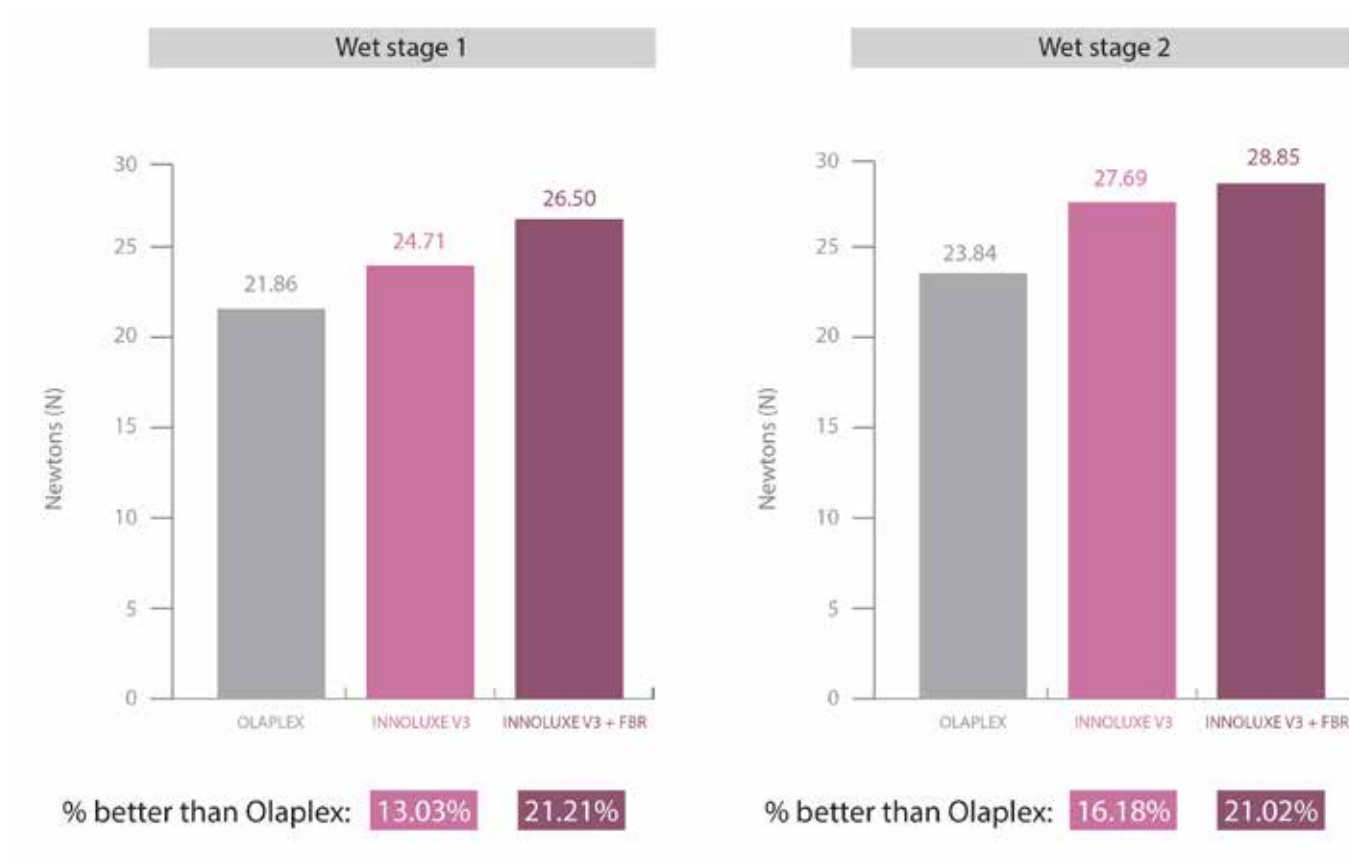
INNOLuxe



## Average of results from 1st swatch testing plus rounds 3 & 4 with Avec Pro Super Lift Bleach

### Innoluxe V3 v Olaplex

	Wet stage 1		Wet stage 2	
	Average	% better than Olaplex	Average	% better than Olaplex
Olaplex	21.86		23.84	
INNoluxe V3	24.71	13.03%	27.69	16.18%
INNoluxe V3 + FBR	26.50	21.21%	28.85	21.02%



**FBR** - Innoluxe's unique pre-colour spray



@innoluxe



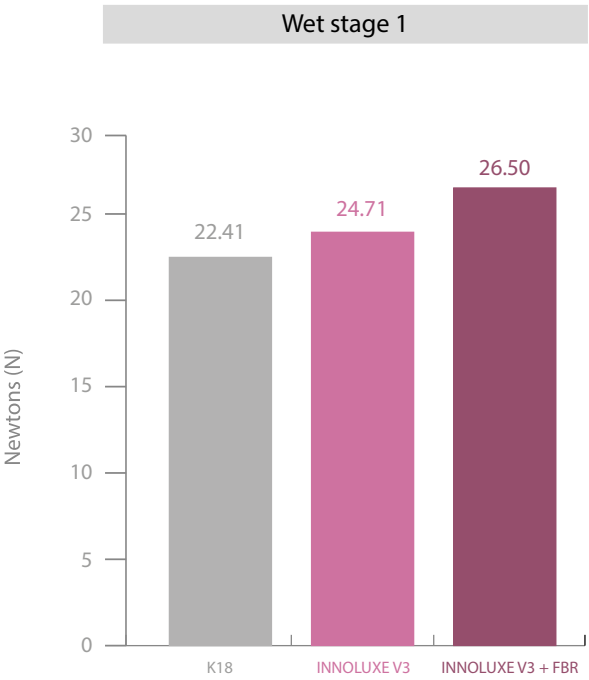
@innoluxeuk

INNoluxe

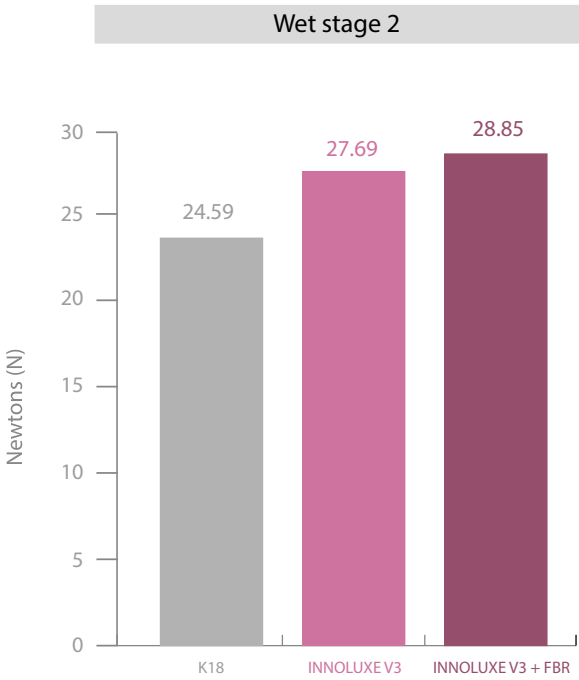
# Average of results from 1st swatch testing plus rounds 3 & 4 with Avec Pro Super Lift Bleach

## Innoluxe V3 v K18

	Wet stage 1		Wet stage 2	
	Average	% better than K18	Average	% better than K18
K18	22.41		24.59	
INNoluxe V3	24.71	10.26%	27.69	12.61%
INNoluxe V3 + FBR	26.50	18.25%	28.85	17.30%



% better than K18: 10.26% 18.25%



% better than K18: 12.61% 17.30%

FBR - Innoluxe’s unique pre-colour spray

## Conclusion

The tensile strength testing of bleached hair treated with various bond-builders clearly demonstrates that INNOluxe V3, particularly when combined with INNOluxe FBR, delivers superior hair strength compared to other leading bond-builders. Across all testing phases—including initial swatch testing and repeated bleaching with Avec Pro Super Lift Bleach—hair treated with INNOluxe V3 consistently outperformed hair treated with Olaplex, K18, and bleach without a bond-builder.

## Key Findings:

- **INNOluxe V3** alone improved hair strength by up to **33.63%** after the first bleaching cycle compared to bleach without a bond-builder, with further improvements after subsequent bleaching rounds.
- **INNOluxe V3 combined with FBR** achieved the highest strength increases, up to **65.60%** after initial treatments and up to **41.02%** after repeated bleaching.
- INNOluxe V3 outperformed **Olaplex** and **K18** across all stages. On average, INNOluxe V3-treated hair was **13.03%–16.18%** stronger than Olaplex and **10.26%–12.61%** stronger than K18 in combined results.
- The gap widened further with the addition of **FBR**, providing up to **21.02%** greater strength than Olaplex and **17.30%** greater than K18.

**Overall**, these results confirm that INNOluxe V3, especially when used with INNOluxe FBR, significantly enhances the tensile strength of bleached hair beyond the capabilities of other leading bond-builders. This supports the positive feedback from hair professionals and validates INNOluxe V3's superior performance in maintaining hair integrity during chemical treatments.



@innoluxe



@innoluxeuk

INNOluxe



*"I've never once recommended  
INNoluxe to any hairdresser who hasn't liked it.  
Now that's really something to boast about!"*



@innoluxe



@innoluxeuk



INNoluxe