

**NOVATEC™ PP Film Grade**

2025.2.1

		Grade	Biaxially Oriented Film	Cast Film					Inflation Film
Items	Unit	Reference Test Method	FL203D	FB3B	FW3GTB	FW4BAT	FX4EA	FX4GF	FG3DG
MFR	g/10min	ISO 1133	3.0	7.5	7.5	7.0	5.3	5.0	9.0
Density	g/cm <sup>3</sup>	ISO 1183	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Flexural Modulus	MPa	ISO 178	1,400	1,500	1,100	950	750	650	1,150
Flexural Strength			43	42	33	30	25	23	34
Tensile Modulus	MPa	ISO 527-1	1,400	1,500	1,100	950	800	650	1,150
Tensile Stress @ Yield			34	33	29	26	24	20	29
Nominal Tensile Strain	%		100	200	>200	>200	>200	>200	>200
Charpy Impact Strength @ 23degC	kJ/m <sup>2</sup>	ISO 179	6.0	4.0	4.9	5.8	8.2	10.0	4.6
Heat Deflection Temperature @ 0.45MPa Load	degC	ISO 75	90	95	80	75	65	60	80
Rockwell Hardness	—	ISO 2039-2	95	95	85	85	75	70	85
Gloss	%	JIS Z8741	85	85	85	85	85	85	85
Features					Low temperature heat seal	Low temperature heat seal	Low temperature heat seal	Low temperature heat seal	Cold resistance Easy Openness
PL confirmation certificate for food applications (JPN)			Approved	Approved	Approved	Approved	Approved	Approved	Approved

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**NOVATEC™ PP Extrusion Grade**

2025.2.1

		Grade	General								Transparency				Cold and Impact Resistance	
Items	Unit	Reference Test Method	EA9	EA9HD	EA9FTD	FY6H	EA6A	FY6	FY6C	FY4	EG8B	EG7F	EG7FTB	EG6D	BC6CB	EC9GD
MFR	g/10min	ISO 1133	0.5	0.4	0.4	1.9	1.9	2.4	2.4	5.0	0.8	1.3	1.3	1.9	2.5	0.5
Density	g/cm <sup>3</sup>	ISO 1183	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Flexural Modulus	MPa	ISO 178	1,850	1,950	2,300	1,800	2,200	1,500	2,100	1,400	900	900	1,050	950	1,450	1,250
Flexural Strength			51	53	60	48	58	43	55	40	29	29	32	31	39	34
Tensile Modulus	MPa	ISO 527-1	1,700	1,800	2,150	1,700	2,200	1,400	2,100	1,400	850	850	1,050	950	1,350	1,100
Tensile Stress @ Yield			36	36	40	36	40	33	40	33	26	26	29	27	30	26
Nominal Tensile Strain			%	>200	>200	50	100	20	>200	50	>200	>200	>200	>200	>200	>200
Charpy Impact Strength @ 23degC	kJ/m <sup>2</sup>	ISO 179	10	10	10	6	3.5	6	4.0	4	15	12	30	8.0	10	50.0
Heat Deflection Temperature @ 0.45MPa Load	degC	ISO 75	105	115	125	105	125	95	125	85	75	75	80	80	90	85
Rockwell Hardness	—	ISO 2039-2	100	100	105	105	105	95	105	95	75	80	80	80	90	65
Gloss	%	JIS Z8741	80	85	85	85	80	85	90	85	90	85	85	90	70	60
Features					High rigidity		High rigidity		High rigidity				High rigidity			
Applications	Sheets		✓	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓
	Flat Yarn		✓	✓	✓	✓	✓	✓	✓							
	Monofilament		✓	✓	✓	✓	✓	✓	✓	✓						
	Band		✓	✓	✓	✓	✓	✓	✓							
	Blow		✓	✓	✓	✓	✓				✓	✓	✓	✓		✓
	Pipes		✓	✓	✓						✓					✓
	Fiber															
PL confirmation certificate for food applications (JPN)			Approved	Approved	Approved	Approved	Approved	Approved	Approved	Approved	Approved	Approved	Approved	Approved	Approved	Approved
Functional Grade	Weather resistance									MH4W						

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**NOVATEC™ PP Injection Grade**

2025.2.1

		Grade	General			Transparency		Impact Resistance										
Items	Unit	Reference Test Method	MA3	MA3H	MA1B	MG03BD	MG05ES	BC6C	BC4BSW	BC3AD	BC2E	BC03C	BC03B	BC03GS	BC05B	BC06C	BC08F	BC10HRF
MFR	g/10min	ISO 1133	11	10	21	30	45	2.5	5.0	10	16	30	30	30	50	60	75	100
Density	g/cm <sup>3</sup>	ISO 1183	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Flexural Modulus	MPa	ISO 178	1,500	2,050	1,500	1,350	1,000	1,750	1,350	1,250	1,450	1,800	1,300	1,400	1,400	1,700	1,400	1,250
Flexural Strength			42	56	43	40	31	45	36	36	38	48	35	36	37	46	36	34
Tensile Modulus	MPa	ISO 527-1	1,500	2,050	1,600	1,350	1,000	1,650	1,350	1,200	1,400	1,800	1,300	1,400	1,400	1,750	1,400	1,300
Tensile Stress @ Yield			34	40	35	33	26	32	26	26	27	33	25	26	26	32	25	24
Nominal Tensile Strain	%		150	30	20	>200	>200	60	150	>200	80	30	30	40	20	10	10	10
Charpy Impact Strength @ 23degC	kJ/m <sup>2</sup>	ISO 179	3.5	2.5	2.5	5	4.5	10	50	10	8.5	5.5	9	10	7.5	4.5	7	6.5
Charpy Impact Strength @ -20degC			-	-	-	-	-	4.0	6.5	4.5	4.0	2.0	3.5	4.0	1.5	1.5	3.0	2.5
Heat Deflection Temperature @ 0.45MPa Load	degC	ISO 75	90	120	100	90	75	110	100	90	100	115	100	100	100	115	105	100
Rockwell Hardness	—	ISO 2039-2	100	110	100	95	75	95	85	85	90	105	85	90	90	105	90	90
Gloss	%	JIS Z8741	85	80	90	90	90	70	60	60	55	70	50	65	45	65	55	55
HAZE (1mmt)	%	ISO 14782	-	-	-	15	15	-	-	-	-	-	-	-	-	-	-	-
Spiral Flow	mm	JPP Method	600	600	700	850	1,000	400	500	600	650	800	800	800	950	1,000	1,050	1,200
Mold Shrinkage	%	JPP Method	1.1~1.5	1.3~1.7	1.1~1.5	1.1~1.5	1.1~1.5	1.3~1.7	1.3~1.7	1.2~1.6	1.0~1.4	1.2~1.6	1.0~1.4	1.2~1.6	1.0~1.4	1.2~1.6	1.2~1.6	1.0~1.4
Features				High rigidity			Antistatic High liquidity	High rigidity High gloss	Antistatic Weather resistance High impact resistance			High rigidity High gloss		High impact resistance Antistatic High gloss	High rigidity	High rigidity High gloss High liquidity	High liquidity	High liquidity
PL confirmation certificate for food applications (JPN)			Approved	Approved	Approved	Approved	Approved	Approved	Approved	Approved	Approved	Approved	Approved	Approved	Approved	Approved	Approved	Approved
Functional Grade	Antistatic				MA1BS	MG03BDS								BC03BS				BC08FS
	Weather resistance									BC4BW				BC03GSW				
	Antistatic · Weather resistance													BC03BSW				
	Heat aging resistance																	

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