Claims

1. A rubber composition comprising natural rubber, nanocarbon and carbon black wherein the relative amount in parts per hundred rubber (pphr) of nanocarbon to carbon black is in the range of 1 : 5 to 1 : 4 and the relative amount in parts per hundred rubber (pphr) of nanocarbon to natural rubber is in the range of 1 : 100 to 8 : 100 and wherein the natural rubber component is from a masterbatch which has been prepared by pre-dispersing said nanocarbon in natural rubber latex and wherein the rubber composition has a scorch time of at least about 3.52 minutes or a cure time of at least about 12.08 minutes.

2. A rubber composition according to claim 1, wherein the relative ratio of nanocarbon to natural rubber in pphr is in the range of any of the following: 2:100 to 6:100 or 2:100 to 5:100.

3. A rubber composition according to claim 1 or 2, wherein the rubber component contains from 1 to 10, 1 to 8, 1 to 6 or 2 to 5 pphr nanocarbon.

4. A rubber composition according to any one of claim 1 or 3, wherein carbon black is present at a level of from 10 to 50 or 20 to 40 pphr.

5. A rubber composition according to any one of claims 1 to 4, wherein the masterbatch is prepared by mechanical stirring.

6. A rubber composition accordint o any one of claims 1 to 5, wherein the masterbatch is produced via:

   a) formation of an aqueous slurry containing a dispersion of nanocarbon, at a level of from 2% to 10% by weight of the aqueous slurry, and a surfactant and optionally a stabilizer;

   b) grinding of the aqueous nanocarbon containing slurry;

c) combination of the aqueous slurry with a natural rubber latex concentrate or diluted latext solution and mizing until a uniform mixture is obtained;

d) coagulation of the mixture followed by aqueous washing, and removal of excess surfactant, water and excess optional stabilisers by coagulate squeezing or suitable alternative method; and

e) formaltion of dried rubber nanocarbon masterbatches by either direct drying of the coagulate from step (d) or by coagulate cutting to granulate size and subsequent drying;

wherein the pH of the slurry and latext are similar or equivalent prior to combination, and wherein the pH of the nanocarbon is capable of being adjusted using a suitable base to align it to the pH of the rubber latex.

7. A rubber composition comprising natural rubber, nanocarbon and carbon black wherein the relative amount in parts per hundred rubber (pphr) of nanocarbon to carbon black is in the range of 1:5 to 1:4 and the relative amount in parts per hundred rubber (pphr) of nanocarbon to natural rubber is in the range of 1 : 100 to 8 : 100 wherein the rubber component is from a masterbatch which has been prepared by pre-dispersing said nanocarbon and carbon black in natural rubber latex, and wherein the rubber composition has a scorch time of at least about 3.52 minutes or a cure time of at least about 12.08 minutes.

8. A rubber composition according to claim 7, wherein the relative ratio of nanocarbon to natural rubber in pphr is in the range of any of the following: 1:40 to 1:12; 1:35 to 1:15 or 1:25 to 1:20.

9. A rubber composition according to any one of claims 7 to 8, wherein the rubber component contains from 1 to 10, 1 to 8, 1 to 6, 3 to 5, or 5 pphr nanocarbon.

10. A rubber composition according to any one of claims 7 to 9, wherein carbon black is present at a level of from 15 to 35, 15 to 30, or 20 to 25 pphr.

11. A rubber composition according to any one of claims 7 to 10, wherein the masterbatch is prepared by mechanical stirring.

12. A rubber composition according to Claim 1 or 7, wherein the natural rubber is selected from any one of or combination of the following: unprocessed and processed latex products such as ammonia containing latex concentrates; RSS, ADS or crepes; TSR, SMR L, SMR CV; speciality rubbers SP, MG, DP NR; or field grade (cup lump) rubber products such as TSR, SMR 10, SMR 20, SMR 10 CV, SMR 20 SV, SMR GP, SMR CV60.

13. A rubber composition according to Claim 1 or 7, wherein the natural rubber is selected from chemically modified natural rubber products including: epoxidized natural rubbers (ENRs) such as for example ENR 25 and ENR 50.

14. A rubber composition according to Claim 1 or 7 containing a vulcanizing agent.

15. A rubber composition according to Claim 1 or 7 containing one or more vulcanizing delaying accelerators.

16. A composition according to Claim 1 or 7 containing one or more vulcanizing activating agents.

17. A rubber composition according to Claim 1 or 7 containing one or more antioxidants.

18. Use of a rubber composition as defined in any of claims 1 to 17 in bridge bearings.

19. Use of a rubber composition as defined in any of claims 1 to 17 in seismic bearings.

20. Use of a rubber composition as defined in any of claims 1 to 17 in marine fendering systems.